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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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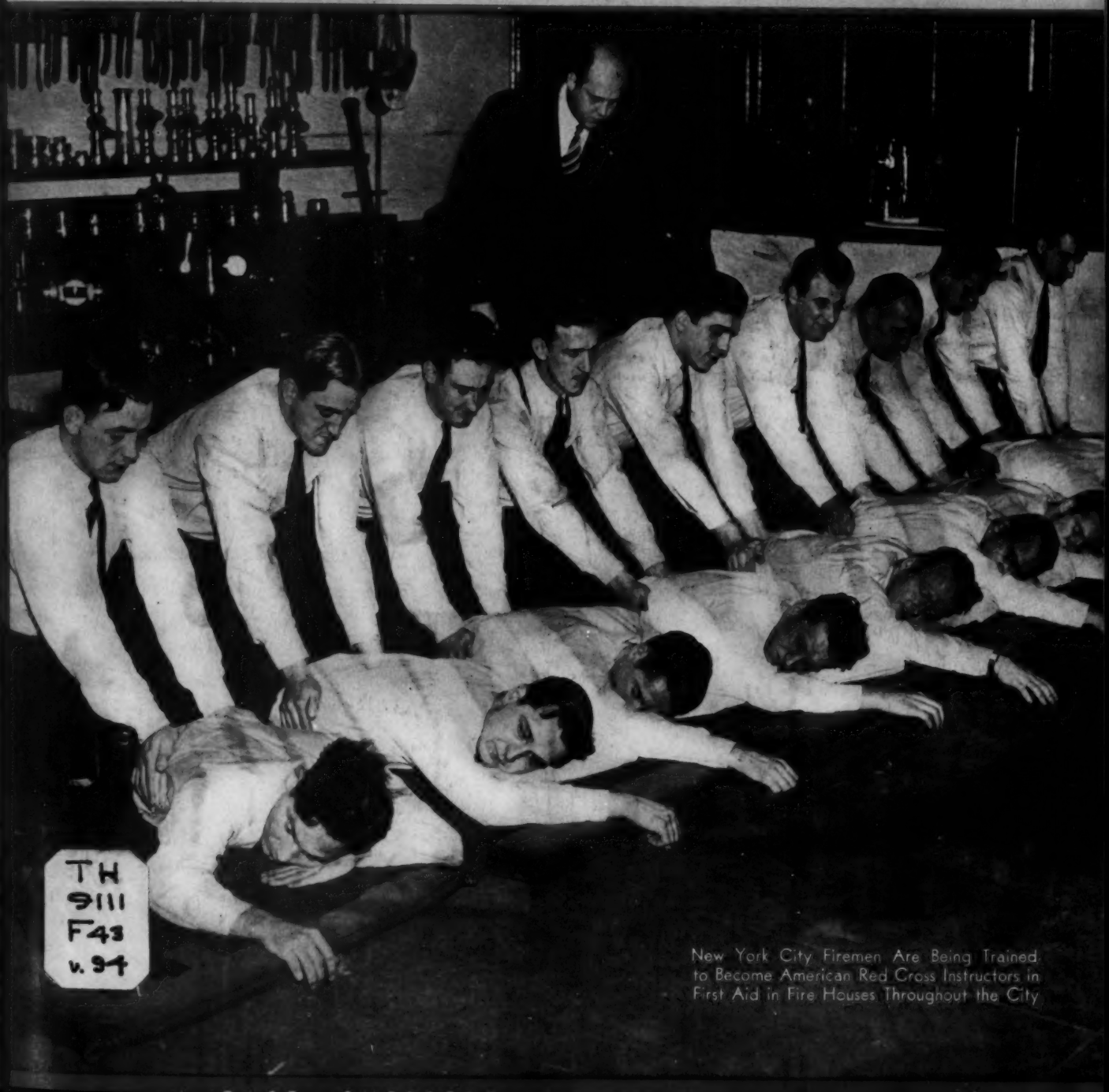
JANUARY, 1941

Vol. 94, No. 1



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FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor
N. N. WOLPERT, *Assistant Editor*

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"To the Editor:

After reading this excellent journal for the past 17 years, I cannot afford to miss any future issues; so, as per enclosed check for a voyage, I climb aboard the good ship FIRE ENGINEERING for another two years cruise, with anticipation of enjoying the pleasure of meeting many interesting people and looking at the many excellent pictures that tell their story in more ways than one.

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● Thus writes an officer of the Los Angeles Fire Department, Capt. Walter Babecky of the Rescue Service, who has been subscribing to FIRE ENGINEERING since February 1924.

● What gratifying New Years greetings such letters prove for us! We reciprocate the warm greetings, and hope that you may continue to enjoy FIRE ENGINEERING for many years to come.

The Publishers

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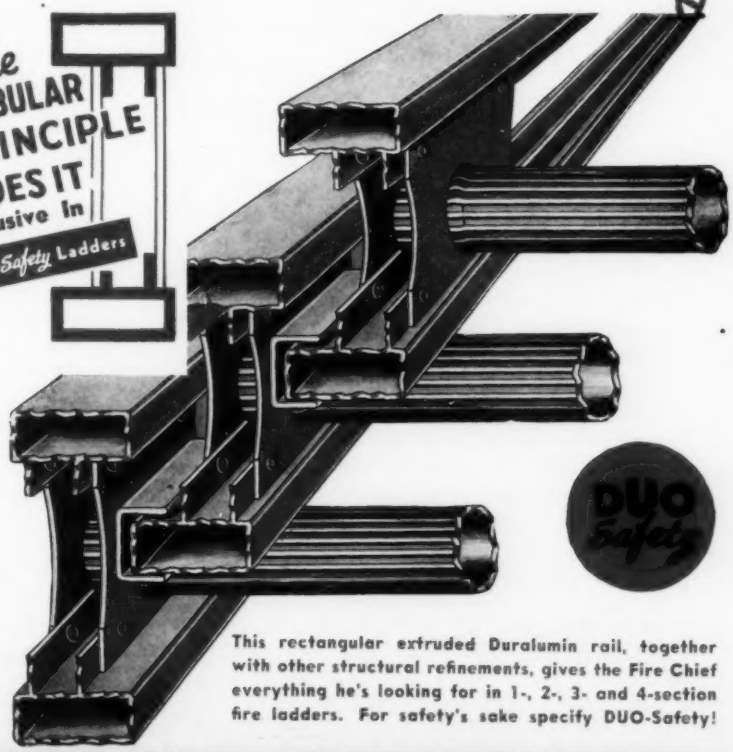

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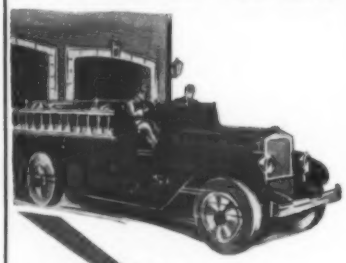

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FIRE ENGINEERING

JANUARY, 1941 VOL. 94. NO. 1

With the Editor

Single Jacket Fire Hose Great Britain is using single jacket, cotton, rubber lined fire hose for protection against fires started by incendiary bombs. Nearly ten million feet of this hose has been already delivered to that country by American factories. One maker received an order for one million feet for London alone.

Because war service is considered but temporary service and because single jacket hose can be turned out faster and at lower cost than multiple jacket hose, the former was chosen.

Single jacket hose is not designed for the heavy service given it by modern municipal fire departments, though it serves satisfactorily in industrial brigades. Some town and village departments, where runs are few, use single jacket hose with good results, but where frequent use is necessary, as in a paid department, double or multiple jacket hose is in order.

Chief Davis Retires A law requiring retirement at sixty-five years was recently enacted at Philadelphia, Pa., forcing the retirement of Chief Ross B. Davis. Thus ends the fire service career of one of the best known and best liked Chiefs in the country.

A few years ago, Chief Davis courageously, and successfully, fought against an antagonistic administration that was determined to force him and Assistant Chief Simmler out of the Department. The passage of the retirement law was said to have been brought about by friends of the former administration.

Thus the city loses a loyal, capable servant whose years of usefulness are far from being at an end.

Politics has again proven itself to be a termite in the foundation of an efficient department.

Don't Wait for Federal Money The headquarters office of the International Association of Fire Chiefs has been in contact with Senator R. F. Wagner and The Advisory Commission to the Council of National Defense since last Fall in an effort to have Federal monies made available for strengthening of the American Fire Service. The final advice from the Commission is to the effect that "the purchasing of equipment for fire departments is a local matter. If local bond issues cannot handle the financing of these preparations, and Government aid is necessary to ensure adequate protection for ultimate needs" it is suggested "that the Reconstruction Finance Corporation be consulted."

As the R. F. C. is nothing more than a loan agency, direct Federal assistance in buying new fire apparatus apparently is not forthcoming at the present time, nor can it be expected in the near future.

Fred Shepperd

Hours of Work of Municipal Firemen in the United States

By CAROL P. BRAINERD and GERALD M. WHITRIGHT*

THE word "platoon takes on a different meaning in ten-group systems. In the simpler systems, a platoon is a group of firemen who are either on duty or on leave. One platoon relieves the other. However, in the ten-group systems, it is the groups which relieve each other. They do this in such a manner that no group is compelled to be on duty for a full twenty-four hours consecutively. Nevertheless, the word "platoon" does retain a meaning in this case. In this example, there were two platoons in the sense that there were two types of tours, namely the nine-hour tour beginning at 9 a. m., and the fifteen-hour tour starting at 6 p. m. Table 1 enables one to locate a member of any of the ten groups during any period of their ten-day cycle.

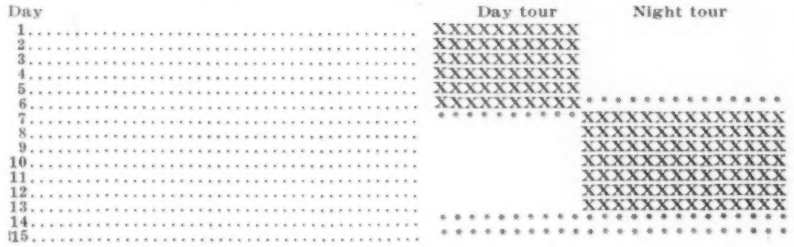
double-platoon system in which each member of the force works the same general pattern of hours and these patterns or cycles overlap each other. The general pattern of hours worked by each fireman is here shown.

the sixth day, he works a day tour of ten hours and during the night of the seventh day, he is on duty fourteen hours, but these two tours of duty are twenty-four hours apart. The night tour of the seventh day is the beginning of a series of seven night tours, after which he has two full days off. His fifteen-day cycle is then completed and another is started. It is identical in all respects with the first, except that it begins on a different day of the week. If the first began on Monday, the second would start on a Tuesday. Not until seven periods are completed does the fireman start a cycle again on a Monday.

As in all platoon systems, the primary purposes is to maintain a constant and balanced fire-fighting force on duty at all times, but at the same time allow the firemen reasonable hours of work and adequate time off.

In order to illustrate how this is achieved by the San Francisco

Chart 3—Two-Platoon System (San Francisco)



X represents 1 hour of work; blank spaces represent 10 or 14 hours off duty.
Asterisks (* * *)represent 24- or 48-hour leave.

Table 1—Two-Platoon System—10 Groups

Day	1		2		3		4		5		6		7		8		9		10	
Tour	9	F	9	F	9	F	9	F	9	F	9	F	9	F	9	F	9	F	9	F
Groups on duty	2	3	1	3	1	2	1	2	1	2	3	2	3	1	2	1	2	1	2	1
	4	5	4	5	4	5	3	5	3	4	5	4	5	4	5	4	5	3	4	3
	8	7	8	6	7	6	7	6	7	6	7	8	6	8	6	7	6	7	6	7
	T	9	T	9	T	9	T	8	9	8	9	T	9	T	9	T	2	T	8	9
Groups off 48 hours	6	6	6	8	8	8	8	T	T	T	T	7	7	7	7	9	9	9	9	6
	5	2	2	2	2	4	4	4	4	1	1	1	1	3	3	3	3	5	5	5
Groups off 24 hours	1	1	7	7	3	3	9	9	5	5	6	6	2	2	8	8	4	4	T	T

Groups not shown in the above table for any tour are at that time taking a 9-hour or 15-hour periods of leave.

NOTE—On the tour line, the figure 9 represents the 9-hour tour from 9 a.m. to 6 p.m.; the letteh F represents the 15-hour tour from 6 p.m. to 9 a.m. Each figure under the tour line represents the number of the group, from 1 to 9, and the capital T represents the tenth group.

Table 2—Hours of Duty—San Francisco Double-Platoon Systém

Days	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15	
Tour	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Members of company on duty	A	B	A	B	A	B	A	B	A	B	A	B	T	A	T	A	B	A	B	A	B	A	B	A	B	A	B	T	B	T
	V	U	V	U	T	L	T	C	T	V	T	V	U	V	U	V	U	V	U	T	L	T	C	T	V	U	V	U	V	U
	M	L	M	L	V	C	V	W	U	W	L	M	L	M	L	M	L	V	L	V	C	U	W	U	M	L	M	L	M	L
	X	C	X	C	M	W	M	N	M	N	X	N	C	N	C	X	C	M	C	M	W	M	N	M	N	C	N	C	N	C
	P	W	P	W	X	N	X	P	X	P	O	P	X	P	W	P	W	X	W	X	N	X	P	X	P	W	P	W	P	W
	S	N	S	N	O	S	O	S	O	S	U	S	O	S	O	S	O	P	O	O	S	O	S	O	S	O	S	O	S	O
Men on 48-hour leave	O	O	O	O	..	..	L	L	L	L	..	..	B	B	B	B	..	..	B	B	V	V	V	V	..	..	A	A	A	A
	T	T	T	T	U	U	U	U	C	C	C	C	..	..	..	..	S	S	..	..	..	..	..	..	C	(C	C)	..	..	..
Men on 24-hour leave	..	..	..	P	(P	P)	P	..	..	..	W	W	W	W	N	N	N	N	P	P	P	P	M	M	M	M	X	X	X	X
	B	..	..	S	S	..	..	V	V	M	M	A	A	X	X	T	T	O	O	U	U	L	L	..	W	..	W	..	..	B
	N	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	N

(x) equals extra day off.
The first row of figures designate the days of the 15-day cycle.
In the second row, the figure 1 represents the 10-hour day tour and 2 represents the 14-hour night tour.
Each capital letter represents an individual member of the company and his position indicates whether he is on or off duty.

The city of San Francisco has developed a unique variation of the

It will be noted that the fireman is on duty ten hours during the daytime the first six days, and then he is off duty twenty-four hours. This twenty-four hours off extends through parts of the sixth and seventh days. However, during the early part of

*Prepared under the supervision of Herman B. Byer Chief Division of Construction and Public Employment, Bureau of Labor Statistics, U. S. Department of Labor. Article taken from the "Monthly Labor Review" of the Bureau of Labor Statistics.

Continued from December issue.

double-platoon system, it might be well to examine the detailed operation of a typical engine company consisting of fourteen men, of which one officer and five firemen are on duty at all times. The engine company is comprised of two officers, one relief officer, five hosemen, and six drivers. Six men worked six day tours and seven night tours; six men worked seven day tours and six night tours; and two worked six day tours and six night tours. The officers consist of one captain, one lieutenant, and a relief officer who is capable of heading the engine company but who can also serve in other capacities in the company.

Hours of Captain

The captain is on duty the day tour of the first six days of the cycle, and he is then off duty for twenty-four hours; following this he finishes out the fifteen days with the seven tours of night duty and two full days off. The lieutenant is in command of the night tour on dates when the captain works the day tour, and vice versa, except the four days when the relief officer takes entire charge of the company on one of the tours.

The hours of duty throughout the entire fifteen days for each of the fourteen men are shown in table 2. The individual members of the company are designated by capital letters as follows: Captain = A; Lieutenant = B; relief officer = C; drivers = S, T, U, V, W, X; Hoseman = L, M, N, O, P.

Division of Tours

It can be seen from this chart that the relief officer is in command alone on only four tours and at other times he is on duty with the Lieutenant. There are three drivers on duty during eighteen of the thirty tours, and only two on duty during the remaining twelve. On twenty-six tours, there are two hosemen and on four tours there are three. Five men work six-day tours and seven night tours; five men work seven day tours and six night tours, and two work six day tours and six night tours. In spite of these apparent irregularities there are one officer and five men on duty at all times.

The captain and driver X start their cycles on the same day and tour, but the captain remains on the day tour for six days, while the driver stays on day tour for seven days. The same situation exists for hoseman O and driver T, but all other members of the company start their cycle on different days. Thus, no two men are on duty for identical cycles.

The six men working the six-day tours and seven-night tours work slightly longer hours per week than the group working seven-day tours and six-night tours. The former are on duty an average of 72.8 hours per week and the latter 71.2. This represents an average for all firemen of seventy-two hours of duty per week. The system as it is set up allows the fireman two days off with pay every fifteen days, but the law requires that firemen receive the equivalent of one day off a week, or 2 1-7 days off every fifteen days. Since fractional days off are not practical, the department allows the seventh of a day to accumulate for seven periods of fifteen days (105 days, fifteen weeks) and then gives each man an extra day off. The extra day off for each man falls on the same day of the week each time. This explains the reason for the extra days off shown in parentheses in table 2.

Three-Platoon System

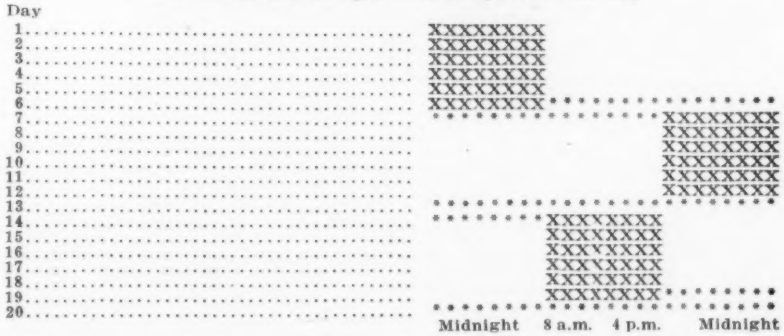
The primary purpose of the three-platoon system is to give the firemen an eight-hour day, with one day off each week. Probably the best example of this system is found in New York City. The citizens of New York City passed a law in 1937 which made mandatory the installation of the three-platoon system which is described here briefly. The law applies to firemen of all grades and to officers ranking as high as Deputy Chief. It provides that no fireman shall be assigned to more than one tour of duty in any twenty-four consecutive hours and that no tour of duty shall exceed eight consecutive hours. Also the type of tour is changed each week for every fireman, giving him an eight-hour shift beginning at midnight one week, at 4 p. m. the next week, and 8 a. m. the third week.

Under this three-platoon system, the fire-fighting personnel is divided into ten groups in a manner somewhat similar to that explained before in the elimination or ten-group double-platoon system. Three groups are on duty each tour, and two groups are off on their thirty-two-hour leave. Each day, three of the groups are on a tour which began at midnight, three are on a tour which began at 8 a. m., and three at 4 p. m. Each group works six tours of one type and then takes a leave of thirty-two hours. The next week the groups change types of tours. In other words, if group one works the tour beginning at midnight for six days, the next week the group will shift to the tour beginning at four p. m., and in the third week the cycle is completed with six tours beginning at 8 a. m. It takes twenty days to complete this cycle. The thirty-two-hour leave which occurs between the tour extending from midnight to 8 a. m. and the tour from 4 p. m. to midnight is responsible for the cycle being twenty days in length rather than twenty-one days. During the two days in which this thirty-two hours off occurs, each member performs eight hours' duty on each day but they are thirty-two hours apart. In the twenty-day period, each group performs eighteen tours of duty. These situations are illustrated in the accompanying chart.

Operation of Cycles

Since twenty days is one day short of a three-week period, it can be seen that if the first cycle began on Monday, the second cycle must start on a Sunday. Hence a fireman in any one group would have to work through seven complete cycles before he would start a cycle on the same day of the week that he started the first cycle.

Chart 4—Three-Platoon System—10 Groups, New York City



X equals 1 hour of duty; blank spaces represent 16 hours of leave on 5 consecutive days. Asterisks (* * *) represent a 32-hour leave.

While there still remains some irregularity in firemen's hours under this system, he has better general working conditions because of the eight-hour day, and the day off each week.

Systems in Operation in Individual Cities

The systems of operation in the fire departments in 367 cities having a population of 25,000 or over is shown, by cities, in table 3.

Table 3—Systems of Operation in All Fire Departments in 367 Cities Having a Population of 25,000 or Over

New England States

City and State	System of Operation: Single platoon	2 platoon	Others
Group I:			
Boston, Mass.	..	x	..
Bridgeport, Conn.	..	x	..
Cambridge, Mass.	..	x	..
Fall River, Mass.	..	x	..
Hartford, Conn.	..	x	..
Lowell, Mass.	..	x	..
Lynn, Mass.	..	x	..
New Bedford, Mass.	..	x	..
New Haven, Conn.	..	x	..
Providence, R. I.	..	x	..
Somerville, Mass.	..	x	..
Springfield, Mass.	..	x	..
Worcester, Mass.	..	x	..
Group II:			
Brockton, Mass.	..	x	..
Holyoke, Mass.	..	x	..
Lawrence, Mass.	..	x	..
Malden, Mass.	..	x	..
Manchester, N. H.	x	..	..
Medford, Mass.	..	x	..
New Britain, Conn.	..	x	..
Newton, Mass.	x	..	..
Pawtucket, R. I.	..	x	..
Portland, Maine	x	..	..
Quincy, Mass.	..	x	..
Waterbury, Conn.	..	x	..
Group III:			
Arlington, Mass.	..	x	..
Bangor, Maine	x	..	..
Beverly, Mass.	..	x	..
Bristol, Conn.	..	x	..
Brookline, Mass.	..	x	..
Central Falls, R. I.	..	x	..
Chelsea, Mass.	..	x	..
Chicopee, Mass.	..	x	..
Concord, N. H.	x	..	..
Cranston, R. I.	..	x	..
E. Providence, R. I.	..	x	..
Everett, Mass.	..	x	..
Fitchburg, Mass.	..	x	..
Haverhill, Mass.	..	x	..
Lewiston, Maine	x	..	..
Meriden, Conn.	..	x	..
Nashua, N. H.	x	..	..
Newport, R. I.	..	x	..
New London, Conn.	..	x	..
Norwalk, Conn.	..	x	..
Pittsfield, Mass.	..	x	..
Revere, Mass.	..	x	..
Salem, Mass.	..	x	..
Stamford, Conn.	..	x	..
Taunton, Mass.	..	x	..
Torrington, Mass.	..	x	..
Waltham, Mass.	..	x	..
Watertown, Mass.	..	x	..
Woonsocket, R. I.	..	x	..

Middle Atlantic States

City and State	System of Operation: Single platoon	2 platoon	Others
Group I:			
Buffalo, N. Y.	..	x	..
Philadelphia, Pa.	..	x	..
Pittsburgh, Pa.	..	x	..
New York City, N. Y.	..	..	[1]x
Group II:			
Albany, N. Y.	..	x	..
Camden, N. J.	..	x	..
Elizabeth, N. J.	..	x	..
Erie, Pa.	..	x	..
Newark, N. J.	..	x	..
Paterson, N. J.	..	x	..
Rochester, N. Y.	..	x	..
Scranton, Pa.	..	x	..
Syracuse, N. Y.	..	x	..
Trenton, N. J.	..	x	..
Utica, N. Y.	..	x	..
Yonkers, N. Y.	..	x	..
Group III:			
Allentown, Pa.	..	x	..
Altoona, Pa.	..	x	..
Atlantic City, N. J.	..	x	..
Bayonne, N. J.	..	x	..
Bethlehem, Pa.	..	x	..
Binghamton, N. Y.	..	x	..
Chester, Pa.	x	..	..
East Orange, N. J.	..	x	..
Harrisburg, Pa.	..	x	..
Hoboken, N. J.	..	x	..
Irvington, N. J.	..	x	..
Johnstown, Pa.	..	x	..
Lancaster, Pa.	..	x	..
McKeesport, Pa.	..	x	..
Mount Vernon, N. Y.	..	x	..
New Rochelle, N. Y.	..	x	..
Niagara Falls, N. Y.	..	x	..
Passaic, N. J.	..	x	..
Schenectady, N. Y.	..	x	..
Troy, N. Y.	..	x	..
Union City, N. J.	..	x	..
Wilkes-Barre, Pa.	..	x	..
York, Pa.	..	x	..
Group IV:			
Aliquippa, Pa.	x	..	..
Amsterdam, N. Y.	..	x	..
Auburn, N. Y.	..	x	..
Belleville, N. J.	..	x	..
Bloomfield, N. J.	..	x	..
Clifton, N. J.	..	x	..
Easton, Pa.	..	x	..
Elmira, N. Y.	..	x	..
Garfield, N. J.	..	..	[2]x
Hazelton, Pa.	..	x	..
Jamestown, N. Y.	..	x	..
Kearney, N. J.	..	x	..
Kingston, N. Y.	..	x	..
Lower Merion, Pa.	..	..	[2]x
Montclair, N. J.	..	x	..
Nanticoke, Pa.	..	x	..
Newburgh, N. Y.	..	x	..
New Brunswick, N. J.	..	x	..
New Castle, Pa.	..	x	..
Norristown, Pa.	..	..	[2]x
Orange, N. J.	..	x	..
Perth Amboy, N. J.	..	x	..
Plainfield, N. J.	..	x	..
Poughkeepsie, N. Y.	..	x	..
Rome, N. Y.	..	x	..
Sharon, Pa.	..	x	..
Upper Darby, Pa.	..	..	[2]x
Watertown, N. Y.	..	x	..
West New York, N. J.	..	x	..
White Plains, N. Y.	..	x	..
Wilkinsburg, Pa.	..	x	..
Williamsport, Pa.	..	x	..
Woodbridge, N. J.	..	x	..

East North Central States

City and State	System of Operation: Single platoon	2 platoon	Others
Group I:			
Detroit, Mich.	..	x	..
Chicago, Ill.	..	x	..
Cleveland, Ohio	..	x	..
Milwaukee, Wis.	..	x	..
Group II:			
Akron, Ohio	..	x	..
Canton, Ohio	..	x	..
Cincinnati, Ohio	..	x	..
Columbus, Ohio	..	x	..
Evansville, Ind.	..	x	..
Dayton, Ohio	..	x	..
Flint, Mich.	..	x	..
Fort Wayne, Ind.	..	x	..
Gary, Ind.	..	x	..
Grand Rapids, Mich.	x	..	..
Indianapolis, Ind.	..	x	..
Peoria, Ill.	..	x	..
South Bend, Ind.	..	x	..
Toledo, Ohio	x	..	..
Youngstown, Ohio	..	x	..
Group III:			
Cicero, Ill.	..	x	..
Cleveland Heights, Ohio	..	x	..
Dearborn, Mich.	..	x	..
Decatur, Ill.	..	x	..
East Chicago, Ill.	..	x	..
Evanston, Ill.	..	x	..
Hamilton, Ohio	..	x	..
Hammond, Ind.	..	x	..
Hamtramck, Mich.	..	x	..
Highland Park, Mich.	..	x	..
Jackson, Mich.	..	x	..
Kenosha, Wis.	..	x	..
Kalamazoo, Mich.	..	x	..
Lakewood, Ohio	..	x	..
Lansing, Mich.	..	x	..
Madison, Wis.	..	x	..
Oak Park, Ill.	..	x	..
Pontiac, Mich.	..	x	..
Racine, Wis.	..	x	..
Rockford, Ill.	..	x	..
Saginaw, Mich.	..	x	..
Springfield, Ill.	..	x	..
Springfield, Ohio	..	x	..
Terre Haute, Ind.	..	x	..
Group IV:			
Alton, Ill.	..	x	..
Anderson, Ind.	..	x	..
Ann Arbor, Mich.	..	x	..
Appleton, Wis.	..	x	..
Battle Creek, Mich.	..	x	..
Bay City, Mich.	..	x	..
Belleville, Ill.	..	x	..
Berwyn, Ill.	..	x	..
Bloomington, Ill.	..	x	..
Danville, Ill.	..	x	..
East Cleveland, Ohio	..	x	..
Eau Claire, Wis.	..	x	..
Elgin, Ill.	..	x	..
Elkhart, Ind.	..	x	..
Elyria, Ohio	..	x	..
Fond-du-Lac, Wis.	..	x	..
Galesburg, Ill.	..	x	..
Granite City, Ill.	..	x	..
Green Bay, Wis.	..	x	..
Joliet, Ill.	..	x	..
Kokomo, Ind.	..	x	..
La Crosse, Wis.	..	x	..
Lafayette, Wis.	..	x	..
Lima, Ohio	..	x	..
Lorain, Ohio	..	x	..
Mansfield, Ohio	..	x	..
Marion, Ohio	..	x	..
Massillon, Ohio	..	x	..
Maywood, Ill.	..	x	..
Michigan City, Ind.	..	x	..
Middletown, Ohio	..	x	..
Mishawaka, Ind.	..	x	..
Moline, Ill.	..	x	..
Muncie, Ind.	..	x	..
Muskegon, Mich.	..	x	..
New Albany, Ind.	..	x	..
Newark, Ohio	..	x	..
Norwood, Ohio	..	x	..
Oshkosh, Wis.	..	x	..
Port Huron, Mich.	..	x	..
Portsmouth, Ohio	..	x	..
Quincy, Ill.	..	x	..
Richmond, Ind.	..	x	..
Rock Island, Ill.	..	x	..
Sheboygan, Wis.	..	x	..
Steubenville, Ohio	..	x	..
Superior, Wis.	..	x	..
Warren, Ohio	..	x	..
Waukegan, Ill.	..	x	..
Wyandotte, Mich.	..	x	..
West Allis, Wis.	..	x	..
Zanesville, Ohio	..	x	..

West North Central States

City and State	System of Operation: Single platoon	2 platoon	Others
Group I:			
Des Moines, Iowa	..	x	..
Duluth, Minn.	..	x	..
Kansas City, Kan.	..	x	..
Kansas City, Mo.	..	x	..
Minneapolis, Minn.	..	x	..
Omaha, Nebr.	..	x	..
St. Louis, Mo.	..	x	..
St. Paul, Minn.	..	x	..
Wichita, Kans.	..	x	..
Group II:			
Cedar Rapids, Iowa	..	x	..
Davenport, Iowa	..	x	..
Lincoln, Nebr.	..	x	..
St. Joseph, Mo.	..	x	..
Sioux City, Mo.	..	x	..
Springfield, Mo.	..	x	..
Topeka, Kans.	..	x	..
Group III:			
Burlington, Iowa	..	x	..
Clinton, Iowa	x	..	..
Council Bluffs, Iowa	..	x	..
Dubuque, Iowa	..	x	..
Fargo, N. Dak.	..	x	..
Hutchinson, Kans.	..	x	..
Joplin, Mo.	..	x	..
Ottumwa, Iowa	..	x	..
Sioux Falls, S. Dak.	..	x	..
University City, Mo.	x	..	..
Waterloo, Iowa	..	x	..

[1]3-platoon, 10-group system.
[2]Volunteer systems.

South Atlantic States

City and State	System of Operation: Single plan	2 platoon	Others
Group I:			
Atlanta, Ga.	..	x	..
Baltimore, Md.	..	x	..
Jacksonville, Fla.	..	x	..
Miami, Fla.	..	x	..
Norfolk, Va.	..	x	..
Richmond, Va.	..	x	..
Tampa, Fla.	..	x	..
Washington, D. C.	..	x	..
Wilmington, Del.	..	x	..
Group II:			
Ashville, N. C.	..	x	..
Augusta, Ga.	..	x	..
Charlotte, N. C.	..	x	..
Charleston, S. C.	..	x	..
Charleston, W. Va.	..	x	..
Columbia, S. C.	..	x	..
Durham, N. C.	..	x	..
Greensboro, N. C.	x	..	..
Huntington, W. Va.	..	x	..
Macon, Ga.	..	x	..
Roanoke, Va.	..	x	..
Savannah, Ga.	..	x	..
Wheeling, W. Va.	..	x	..
Winston-Salem, N. C.	..	x	..
Group III:			
Clarksburg, W. Va.	..	x	..
Columbus, Ga.	..	x	..
Cumberland, Md.	..	x	..
Greenville, S. C.	..	x	..
Hagerstown, Md.	..	x	..
High Point, N. C.	x	..	..
Lynchburg, Va.	..	x	..
Newport News, Va.	..	x	..
Orlando, Fla.	..	x	..
Parkersburg, W. Va.	..	x	..
Petersburg, Va.	..	x	..
Portsmouth, Va.	..	x	..
Raleigh, N. C.	..	x	..
St. Petersburg, Fla.	..	x	..
Spartanburg, S. C.	..	x	..
Wilmington, N. C.	..	x	..

East South Central States

City and State	System of Operation: Single plan	2 platoon	Others
Group I:			
Birmingham, Ala.	..	x	..
Chattanooga, Tenn.	..	x	..
Knoxville, Tenn.	..	x	..
Louisville, Ky.	..	x	..
Nashville, Tenn.	..	x	..
Memphis, Tenn.	..	x	..
Group II:			
Covington, Ky.	..	x	..
Mobile, Ala.	..	x	..
Montgomery, Ala.	..	x	..
Group III:			
Ashland, Ky.	..	x	..
Jackson, Miss.	..	x	..
Johnson City, Tenn.	..	x	..
Lexington, Ky.	..	x	..
Meridian, Miss.	..	x	..
Newport, Ky.	..	x	..
Paducah, Ky.	..	x	..

West South Central States

City and State	System of Operation: Single plan	2 platoon	Others
Group I:			
Dallas, Tex.	..	x	..
El Paso, Tex.	..	x	..
Fort Worth, Tex.	..	x	..
Houston, Tex.	..	x	..
New Orleans, La.	..	x	..
Oklahoma City, Okla.	..	x	..
San Antonio, Tex.	..	x	..
Tulsa, Okla.	..	x	..
Group II:			
Austin, Tex.	..	x	..
Beaumont, Tex.	..	x	..
Galveston, Tex.	..	x	..
Little Rock, Ark.	..	x	..
Port Arthur, Tex.	..	x	..
Shreveport, La.	..	x	..
Waco, Tex.	..	x	..
Group III:			
Amarillo, Tex.	..	x	..
Baton Rouge, La.	..	x	..
Corpus Christi, Tex.	x	..	..
Enid, Okla.	..	x	..
Fort Smith, Ark.	..	x	..
Laredo, Tex.	..	x	..
Monroe, La.[3]	..	..	..
Muskogee, Okla.	..	x	..
San Angelo, Tex.	x	..	..
Texarkana, Tex.	..	x	..
Wichita Falls, Tex.	..	x	..

Mountain States

City and State	System of Operation: Single plan	2 platoon	Others
Group I:			
Denver, Colo.	..	x	..
Salt Lake City, Utah	..	x	..
Group II:			
Pueblo, Colo.	..	x	..
Group III:			
Albuquerque, N. Mex.	..	x	..
Butte, Mont.	..	..	[4]x
Colorado Springs, Colo.	..	x	..
Great Falls, Mont.	..	..	[4]x
Ogden, Utah	..	x	..
Phoenix, Ariz.	..	x	..
Tucson, Ariz.	..	x	..

[3]Information not complete.
[4]3-platoon systems.

Pacific States

City and State	System of Operation: Single plan	2 platoon	Others
Group I:			
Long Beach, Calif.	..	x	..
Los Angeles, Calif.	..	x	..
Oakland, Calif.	..	x	..
Portland, Oreg.	..	x	..
San Diego, Calif.	..	x	..
San Francisco, Calif.	..	x	..
Seattle, Wash.	..	x	..
Spokane, Wash.	..	x	..
Tacoma, Wash.	..	x	..
Group II:			
Berkley, Calif.	..	x	..
Fresno, Calif.	..	x	..
Glendale, Calif.	..	x	..
Pasadena, Calif.	..	x	..
Sacramento, Calif.	..	x	..
San Jose, Calif.	..	x	..
Group III:			
Alameda, Calif.	..	x	..
Alhambra, Calif.	..	x	..
Bakersfield, Calif.	..	x	..
Bellingham, Calif.	..	x	..
Belvidere, Calif.	..	..	[2]x
Everett, Wash.	..	x	..
Riverside, Calif.	..	x	..
Santa Ana, Calif.	..	x	..
Salem, Oreg.	..	x	..
San Bernardino, Calif.	..	x	..
Santa Barbara, Calif.	..	x	..
Santa Monica, Calif.	..	x	..
Stockton, Calif.	..	x	..

[2]Volunteer systems.

Santa Rosa Dedicates New Stations

Many Santa Rosa, Cal., citizens and visitors from neighboring communities took advantage of the "open house" invitation in connection with the dedication of two new fire stations in Santa Rosa to inspect the city's $90,000 modernized fire department.

J. W. Stevens, Chief of the Fire Prevention Bureau of the Board of Fire Underwriters of the Pacific Coast, paid a high compliment to the city for the improved department. He pointed out that the progress Santa Rosa has made over the past twenty-one years would be a credit to any city in the land.

Tribute was paid to Fire Chief Lloyd Rhoades for his work in behalf of the department, and to former Chief Duncan, who has served forty-six years with the department and is still active in the force.

Chicago Has Largest Fireman Family

The Hughes family in Chicago, Ill., claims to have the largest family of active firemen in the country. The family, fathered by James R. Hughes, a Captain who retired in 1932, lives in downtown Chicago and is composed of the following members: William P. Hughes, Lieutenant; J. R. Hughes, Captain; W. J. Hughes Engineer; H. G. Hughes, Lieutenant; R. D. Hughes, Engineer; and Jack Hughes, Fireman.

GORDON R. MULLINS.

Volunteers Meet at Norwich

A delegation of more than 800 volunteer firemen met at Norwich, N. Y., on November 12, to listen to Retired Battalion Chief J. J. Deasy discuss "Fire Service in Relation to National Defense and Other Volunteer Fire Department Problems." Previous to the address, a dinner was served to over 100 firemen, from the various counties, in the Chenango Hotel.

Chairman Leon Ingersoll and Chief Cummings of New Woodstock arranged the meeting. From the indication of the enthusiasm with which the address was received, Central New York will shortly enter the ranks of counties in this state that conduct zone training schools for volunteer firemen.

Salem County Starts Move-Up System

The Salem County Firemen's Association of New Jersey is having posters printed for distribution in each fire house in the county containing a list of all available apparatus and equipment in each company. This chart will be a great help in carrying out the move-up system soon to be placed into effect in the county.

R. S. BELL.

Men and Apparatus Lined Up Before the Modern Santa Rosa Fire Headquarters

Ventilation at Fires

Importance of Removing Hot Gases from Buildings on Fires, and How This Should be Done

By F. A. MURRAY
Chief of Fire Department, Teaneck, N. J.

MANY Civil Service Examiners dwell extensively on this important subject of ventilation where examinations are held for promotion in the fire service. At a recent examination held for the position of Captain, the following questions were asked:

Question: What benefits are derived from ventilation?

Answer: Proper and timely ventilation will relieve the building or floor of pent up gases, smoke, and heat. It will allow the firemen to get to the base of the fire quickly. It will afford those who may be trapped in the building a better chance of escape. It will prevent the mushrooming and lateral spread of fire. It will prevent a backdraught. It will greatly lessen the punishment firemen are subjected to in the inhalation of smoke, heat, and toxic gases.

Start of Ventilation

Question: Where should ventilation begin, and why?

Answer: Ventilation should always begin at the roof or above the fire. It is considered good practice to start at the roof to ventilate when the building is not over six stories in height. Any building over six stories in height can be properly ventilated by beginning at second floor above the fire floor. I do not wish to imply that this is an applied rule, much must be left to the judgment of the officer in charge of the fire. Each building should be considered from the view point of conditions encountered, such as; location of fire, the extent and duration of fire, construction and type of building, wind conditions, and overhead exposures sides and rear.

Question: What precautions should be taken by firemen while ventilating?

Answer: Firemen should always protect themselves while working on the roof of a building. If you go to the roof by way of inside stairway and scuttle hole at night, be sure you do not step off edge of roof as scuttle may be built near edge. If the roof is covered with snow, be careful you do not step on skylights that are built a few inches above roof level. (A fireman lost his life on the roof of a one-story taxpayer in this manner). In cutting holes in roof, always cut them with the wind at your back.

F. A. Murray

If firemen are sent to roof to ventilate through inside stairway, the chief in street should as soon as possible place ladder to roof, so that men would have two avenues of escape. Do not stand close to outside cellar windows when ventilating a cellar fire, as fire is liable to leap a distance of eight or ten feet from window. Use pike pole or short ladder to break cellar windows, standing well back from window. When breaking plate glass windows to ventilate a store fire, stand well back to one side, never in front of window. Use pike pole and strike the window at the top. Continue to strike down, and be sure and clean all the glass from the frame, this is most important, it will prevent large sections of glass from sliding down pike pole and inflicting serious injuries.

No less than two firemen should be sent to roof to ventilate, and proper tools should always be taken along such as, ax, pike pole, tin roof cutter, and life rope. Of late years we have an added hazard on the roofs of nearly all buildings, I refer to the maze of radio antennas. These wires create a very dangerous situation especially when working at night and with a heavy smoke condition.

Common Question On Tests

From this sample of questions, you will readily agree that "Ventilation" is uppermost in the minds of Civil Service examiners.

One of the most important factors to be taken into consideration when proper ventilation is to be provided, is to have large water lines laid and charged before the building is opened up. Many fires have extended due to the overlooking of this important matter. The indiscriminate opening up of windows, doors, roof covering, etc., of a building on fire might very readily lead to serious loss of life and extensive property damage, if large water lines are not in position to extinguish or head off fire.

In ventilating a roof, all portable openings should be given first consideration. If these openings seem inadequate, and excessive heat or fire is confined in cock loft, then holes will have to be cut in roof. Do not cut roof supports, confine activities to cutting between roof beams, and make hole of sufficient size as to allow for complete ventilation. Good judgment must be exercised in that no hazard is created to any adjoining property. When cutting holes on roof, see that there are no obstructions under roof, such as hanging ceiling, or double roof. If these are encountered, you will have to punch a hole through with plaster hook, or other tool. Thorough ventilation cannot be obtained if this is not done.

Attic Is Important

In fighting a fire in a dwelling, although the fire may be in the cellar, never overlook the immediate detailing of at least two firemen to the attic. This should be done immediately upon arrival. We are all familiar with the contents of the vast majority of attics, stacks of old newspapers, magazines, old furniture with the excelsior, burlap, and hair filling exposed, old mattresses, etc. All of these make ready fuel for fire, and may ignite from heat. Do not be in too great a hurry to cut holes in dwelling house roof. If there is a scuttle, remove it, open windows, have booster line ready to operate in case small fire is encountered. Only open the roof when you find it impossible to

From a paper presented at the Poughkeepsie convention of the New York State Fire Chiefs' Association.

get into attic. In opening the roof, try and get directly over fire, open at the highest point near ridge pole but do not disrupt ridge pole.

A fire in basement of a one-story taxpayer with only entrance to cellar through trap door at rear of the individual stores, presents a serious situation. Owing to the accessibility to enter cellar, fire very often spreads over the entire cellar area. In order to facilitate the entering of cellar through these inside trap doors, it is necessary to ventilate stores above. The most practical method of doing this is to cut holes in floor just inside of plate glass windows, first having removed the plate glass from the frame. Always remember that when holes are cut in store floor, to place some object in hole to protect men working on floor from falling in same. Most basements are no more than huge holes in the ground affording very little opportunity for oxygen to enter. Therefore fires in basements are prolific producers of carbon monoxide gas, which is accountable for the fact that the greater number of firemen are overcome when fighting basement fires. The use of self contained oxygen masks should be more generally used at basement fires. I know of one large eastern city that now has about one hundred such masks.

Role of Wind

Wind direction plays an important part when ventilating. Opening windows on the windward side of a building may not produce results, unless windows are opened on the leeward side. Best results are usually obtained when cross ventilation is employed. Use extreme care and judgement in opening wire glass windows and iron shutters, where in so doing adjoining building may be exposed to fire.

Atmospheric conditions greatly affects ventilation. Did you ever stand in the street where smoke conditions were nearly as bad as inside the building? I am sure you have, observed the inability of your chimney to carry away smoke during the starting of a fire in your furnace when the air was not right. Both of these conditions are the result of atmospheric density. When this condition exists, the gases and smoke hang along the ground. Opening of the roof and upper stories will not suffice, it is absolutely necessary under such conditions to open all windows on lower floors.

The element of time plays an important part in the proper ventilation of buildings on fire. If it were possible to properly time our ventilating operations with the proper placing and operation of hose lines, then we would be really accomplishing something worthy.

All Volunteers Should Be Trained

In training firemen, I have found that in many volunteer departments, the personnel of engine companies would have nothing to do with ventilation, or in fact any operation classified as the duties of a ladder company. I believe that every member of a department should be well trained in all of the duties that a fireman may be called on to do.

Never overlook an adjoining building that may be charged with smoke and heat which has entered windows or party wall opening. This building should be given immediate attention and ventilated.

Ventilation should always be accomplished first, if possible, by the opening of windows, or the removal of portable coverings. Windows should be lowered from the top, and raised from the bottom. This will allow the smoke, heat, and gases to escape from the top, and fresh air to enter from the bottom. Sometimes it is better to alternate every other window, one down from top, the other up from bottom. With this proceedure, firemen have a better means of entry or exit by way of ladders to and from the floor.

Care in Rural Areas

Volunteer fire departments operating in rural districts, with a limited amount of water, should exercise extreme caution in ordering the building ventilated. Only such parts of the building should be opened up that will allow firemen to direct streams on base of fire, or to head same off. Firemen are called on to take excessive punishment at these fires, as their limited water supply must be conserved, and not a gallon wasted. Where it is necessary to replenish booster tanks, then ventilation should be of an intermittent nature. I term this procedure "partial and intermittent ventilation."

I have seen buildings destroyed, also the unnecessary extension of fire due to improper ventilation. It is my belief that the officer in charge of a fire may be partially responsible for improper ventilation.

Let us assume that a Chief has arrived some time in advance of a ladder company, he has completed his survey and has ordered water lines laid. The ladder company arrives and the officer is ordered to ventilate, he not being familiar with the chief's previous orders, nor has he the time to make his own personal size up. He proceeds to do just what the Chief ordered. The building is opened up, and if there is any delay in laying additional lines to properly cover the building, it is possible the fire will extend due to its being improperly ventilated.

Orders Should Be Specific

I believe the officer in charge of the fire should give more specific orders; such as; Ventilate roof, or roof and top floor, or top floor only, or specific locations mentioned in his order. He may then order additional ventilation later, as would be justified by having charged water lines available. This method is as near as we can hope to reach in proper timing of ventilation.

Excerpt from Book

That very splendid book "What Every Fire Fighter Should Know," published by FIRE ENGINEERING, has this to say regarding ventilation:

"Probably no subject has received more deserved attention in recent years by those who give careful thought to fire fighting than the subject of ventilation."

I say that ventilation is probably the most important of all acts relative to the successful extinguishment of fire. I say this for I believe that we can commit a serious error by the act of ventilating, (ventilating improperly) also by failing to ventilate at all.

While reams could be written on this important matter, I only attempted to cover the most important features of this subject.

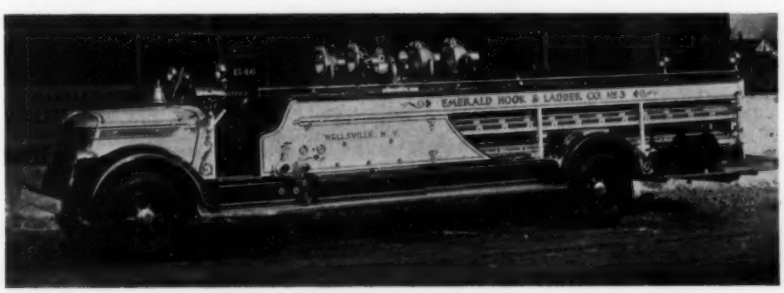
Ventilation is a means to an end. That end to all fire department members, whether you are part of the large city department, or the small volunteer department is; The extinguishment of fire in the shortest space of time with the least fire and water damage.

To me there is nothing mysterious connected with the extinguishment of fire. I say this for the reason that I have heard Chiefs in the smaller cities and towns admit that they were afraid to tackle a large fire as they were led to believe it required long years of experience to handle such a type fire. I cannot concur with such a belief, for it is my honest and candid opinion that a modest amount of experience, to which has been added the catalogued experiences of others, together with close application of study and good common sense, will result in an intelligent fire officer.

Elmer Purchases New Pumper

The Borough of Elmer, N. J., recently bought the Fire Department a new pumper which was built by the Hale Pump Company of Conshohocken, Pa. It has a 500 gpm, two-stage, centrifugal pump; a 200-gallon booster tank; 150 feet of rubber booster hose; 1,000 feet of 2½-inch and 300 feet of 1½-inch fire hose. The pumper passed the Underwriter's test successfully.

R. S. BELL.



This Truck Was Recently Purchased for Wellsville, N. Y., Fire Department

The Emerald Hook and Ladder Company in Wellsville purchased this new ladder truck from the Cayasler Manufacturing Corporation of Buffalo, N. Y. The truck is equipped with an 1,800 watt, eighty-two-pound Homelite gasoline engine driven generator and Crouse-Hinds lights.

Radio Proves an Indispensable Department Asset

WITH this issue, is concluded the symposium on the value of radio in fire department work, which has appeared in several previous isues of FIRE ENGINEERING.

Malden, Mass.
L. A. Keddie, Acting Chief

One engine company and a fire prevention car are equipped with one-way sets, and two Chiefs' cars are equipped with the two-way sets. Radios have been beneficial for securing additional help at fires with the least possible delay. They enable us to be in constant touch with headquarters when out of quarters on Fire Department business. I believe that the radio is an indispensable asset to efficient fire fighting. Our radio is operated in connection with police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. A local radio man installs our sets.

St. Petersburg, Fla.
C. W. Nesbit, Chief

The Chief's car is equipped with a two-way set, and One Assistant Chief's car is at the present time equipped with a one-way set, but we are planning to install a two-way set in this car. We have found the radio beneficial in notifying the Chief or the Assistant Chief of a fire when they are away from the station, and also in being in direct contact with Headquarters via the radio at all times. I believe that the radio is an indispensable asset to efficient fire fighting.

Our radios are operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use R.C.A. equipment.

Superior, Wis.
J. T. Sweeney, Chief

One Assistant Chief's car is equipped with one-way radio. We have found it very beneficial. When the Assistant Chief is in some outlying district where telephone communication is very poor, or there is none at all, we are able to reach him by radio. It has proved to be an asset for us so far in the little use we have made of it.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use a Delco receiver.

San Jose, Cal.
Charles Plummer, Chief

There are five cars in the Fire Department that are equipped with two-way sets. We have found the radio beneficial in that inter-communication is greatly facilitated. I believe it to be an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use radios built by the radio technician of the Police Department.

Duluth, Minn.
John Fisher, Chief

Four cars are equipped with one-way radios. We have found them beneficial in picking up alarms of other fires while working at one fire, and in picking up alarms of fires in the city or outside the city. I believe that it is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use American-Bosch receiving sets.

Bridgeport, Conn.
T. F. Burns, Chief

The Chiefs' cars and the fire alarm truck are equipped with one-way radios. We have found them very beneficial because we can receive all alarms, even though we are away from quarters, and when answering an alarm, we can receive word of any other alarms without returning to quarters. I know we certainly would not want to be without the radio.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Philco receivers.

Trenton, N. J.
T. J. Phelan, Chief

Four Chiefs' cars are equipped with one-way sets. The chief officers can keep in contact with the department through the radio division. This division is controlled by the Police Department and works cooperatively with our department. While I do not believe that the radio is indispensable, in my opinion it is obviously an asset.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use R.C.A. sets.

Wilkes-Barre, Pa.
Ambrose Saricks, Chief

The Chief's car, the Assistant Chief's car, and the Police and Fire Signal car are all equipped with one-way radios. We have found radio beneficial in our cars because while answering one alarm, should another alarm come in, the Police Sergeant on duty at Police Headquarters broadcasts the location of the second fire or fires, and we are able to respond to the alarm from the present location. I believe that it is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. American-Bosch sets are used exclusively in both Fire and Police Departments.

Watertown, Mass.
John W. O'Hearn, Chief

One car is equipped with a one-way radio. We have found this set beneficial because we remain in touch with headquarters at all times. I believe that it is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use a Philco receiver.

Fitchburg, Mass.
Michael J. Shea, Chief

The Chief's car is equipped with a one-way radio. I have found the radio beneficial. When I am around the city on department business, I can keep in touch with anything that happens through the Police Department broadcasting station. I believe that radio has come to stay and is very important in Fire and Police Departments.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use an American-Bosch receiver.

Lowell, Mass.
C. F. Stackpole, Chief

We use a two-way system through the police transmitter. The Chief's car is equipped with a two-way set. We have found the radio beneficial in many ways such as calling for additional help, receiving alarms while absent from headquarters, sending and receiving messages, and many other ways.

Our radio is operated in connection with the police radio transmitter. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use Greybar equipment.

Shreveport, La.
S. J. Flores, Chief

We have seven cars equipped with one-way radio sets and five with two-way sets. Through the radio, contact can be maintained with headquarters at all times. I believe that radio is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator at Fire Alarm Headquarters where the radio is operated. Our equipment has been built by the department.

Bloomfield, N. J.
T. F. Cussner, Chief

We use one one-way set in the Chief's car. We have found the radio to be very beneficial as it allows the department to communicate with the Chief in

(*Continued on page 37*)

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

CHAINS ON HYDRANT OUTLETS TO PREVENT LOSS OF CAPS

To prevent the public, particularly small children, from tampering with hydrant outlets, it has been the custom for years to place hydrant caps on these outlets, and then by means of a swivel ring and chain, to attach these caps to the hydrant.

Those who furthered the plan, argued that the caps prevent foreign material from being pushed into the hydrant outlets, and the chains prevented the theft or loss of the caps.

However, many fire departments have found that the rings which hold the caps, bind or become corroded to the outlet, so that there is some delay when it becomes necessary, because of a fire, to remove the caps, and attach hose lines. The question then comes up, is the hydrant chain really necessary, or can it be eliminated?

This topic forms the basis for this round table discussion. The problem in full appears in the box on this page. So many have contributed to this discussion, that, because of space limitations, many replies have been held over and will be published in the next issue.

Discussion of the Question

G. A. Powers, Chief, Newport News, Va.: We have found the cap chains to be very favorable, and in only two instances have we experienced any trouble with them. This was due to the fact that when the painters painted the fire hydrants, they allowed the paint to seal around where the ring goes around the cap and does the turning. When this is sealed with paint, a rust corrosion sets up underneath the ring and binds the ring to the post pin and will not turn. As a rule, a lick with the plug spanner will break it loose.

When the plugs are painted, they should be gone over after the paint has dried and broken loose. It is a good suggestion to warn the painter not to put too much paint at this point.

Alex Dotson, Chief, Elkhart, Ind.: Chains were provided for when the hydrants were installed, but we have had them all removed. We found they were a nuisance, especially in the winter time.

The chains become twisted and tangled, and the fitting on to the hydrant cap becomes clogged with rust and will not allow free movement of cap, causing delay in the removal of the same.

We have lost a few by being stolen for junk, and a few have been removed by boys and thrown away, but we have not lost any in several years.

J. Thomas Bennett, Chief, Ansonia, Conn.: At one time, all hydrants in our city were provided with cap chains. But as the chains became broken, they were removed one at a time, until at the present time, I doubt very much if there are any more hydrants left in our city equipped with chains.

In my estimation, hydrant chains are more trouble than they are worth. If the rings fit the caps snug, they stick when painted, and freeze very easily in winter. If the rings are loose, they have a tendency to bind and twist when the cap is turned. Thus valuable time is lost when every minute counts upon arrival at a fire.

We have approximately 225 hydrants in service in our city, and we have had little or no trouble on account of missing caps. We make a practice of replacing all hydrant caps, hand tight, so that if children or adults were really mischief minded, they could readily remove any or all caps.

But by placing articles before the public in our local newspaper from time to time reminding them of the duties and responsibilities of both the Fire Department and the public in general, the plan has helped very much in reducing loss of hydrant caps or damage to any property connected with the Fire Department. As a matter of fact, after all heavy snow storms, the Boy Scouts make a practice of removing the snow from around hydrants. This, in my estimation, shows a great deal of civic pride and respect on the part of the youth of our city toward the Fire Department.

Robert Jones, Chief, Chattanooga, Tenn.: All hydrant outlets maintained by this Department are attached with chain to barrel of hydrant. This includes both the 2½ and four-inch outlets.

The attached chains have proven effective in that the outlet caps do not become misplaced easily and cannot be stolen without effort.

We have never experienced any interference with these chains while making use of the hydrant, and twice a month the engineer and his assistant while oiling and inspecting the hydrants in their respective districts see to it that the chains are working freely on the outlet caps.

F. W. Donnelly, Chief, Lincoln, Neb.: Our hydrants are equipped with chains to prevent loss of caps. We have found them quite effective.

They interfere with the plugman to some extent when removing the cap. The chain will turn with the cap, especially if the swivel happens to be rusted or corroded with paint. Plugmen are instructed to break chain, if necessary. Usually a sharp blow with wrench is sufficient to break the chain. This slows operation to some extent, but we have had no serious delays.

Occasionally we find a cap missing even though they are chained, due, perhaps, to the chain being broken and some child or vandal making away with the cap.

R. W. Alsip, Chief, Champaign, Ill.: The city of Champaign has 362 fire hydrants within the corporate limits with all chains removed. The Fire Department went over these hydrants years ago and removed the chains. We were of the opinion, and from experience, found that chains on caps retarded speed in getting into operation with either pumper hookups or direct hydrant streams because of the chains being twisted and in some instances, rusted on the rings on the caps.

We carry extra hydrant caps on all our trucks, but so far the Fire Department has never lost a cap. Our plugs have been free from chains for fifteen years.

John M. Slocum, Chief, Huntington Park, Cal.: All fire hydrants in Huntington Park are equipped with chains attached to outlet caps. Although the chains do hinder the plugman to some extent, I do not believe they interfere enough to warrant that they be taken off. On many occasions we find that the cap has been removed from the outlet and left hanging to the fire plug. I know that if it were not for the chains, our department would suffer the loss of many outlet caps.

H. W. Bryson, Chief, Wenatchee,

HERE IS THE PROBLEM

Are chains provided on your hydrants to prevent the loss of outlet caps?

If so, have you found them effective?

In what ways, if any, do they interfere with the use of the hydrants by the Fire Department?

If cap chains are not employed, have you had many caps lost?

Wash.: Chains to prevent the loss of outlet port caps have been used by the city of Wenatchee since the first hydrant was installed. We have heavy snow storms during the winter months, and a cap thrown down when the ground is covered with twelve or more inches of snow might not be quickly found. There is also the theft angle. However, because of having caps attached to a chain, we have had very little experience with their being stolen, or lost, but caps without chains could be taken off by pranksters, or stolen by someone believing that they have a sale value.

We have had the experience of the chain preventing the cap from turning easily when too much paint has been used, making it rough for the chain loop to turn when it begins to flake off, leaving rust spots, or when the ring around the cap has been closed too tight, or when it has been smashed in some way.

The chains are secured to the hydrant below the outlet, and they are often struck by the hydrantman when taking the cap off by hand, which prevents him from getting the cap off quickly in some cases. I believe this could be prevented by fastening the chain above the outlet port to the right or left. This would keep the cap out of the way of the hose connection.

Walter F. Israel, Chief, Detroit, Mich.: We have chains on all hydrants in our city, and have found them very effective. They do not interfere with the department in any way, as the chains are on swivels and the caps turn on swivels.

On several occasions, we have found caps missing, even with chains on. When our men on hydrant inspection find these conditions, they immediately notify the Water Department which replace the caps immediately to keep children from throwing stones into the nozzles of the hydrants.

Joseph P. McCosker, Chief, Bangor, Me.: Chains are provided to prevent the loss of hydrant outlet caps in the city of Bangor. We find them very effective as they prevent the loss of the caps and also protect the threads on the caps. They are especially good during the winter months when there is a lot of snow on the ground.

We do not seem to have any trouble with them. I can see where they might interfere some if the chain on the caps were too long or too short. Once in a while, the swivel on a cap chain may get a little bent, but this can be fixed very easily.

Joe Dolecek, Chief, Atchison, Kans.: Some of our hydrants are equipped with chains, but we do not find them effective. They tangle or twist and prevent the cap from turning. Sometimes the chain has to be broken to allow the cap to turn.

We have very little trouble with lost caps. If we find a fire hydrant with a missing cap, we report it to the water company and they replace it.

William Hoffschwelle, Inspector, St. Louis, Mo.: All municipal fire hydrants in St. Louis are provided with chained outlet caps, and have proven very effective in the protection of threads on outlet.

One end of the chain is bolted underneath the hood, or crown, of the fire hydrant, and the other end of the chain is fitted into a molded two-inch rosette which is recessed three eighths of an inch behind the cap nut, which allows the cap to be turned either way without fouling. The chains are so attached to the hydrants that they swing clear at all times, and do not interfere when attaching suction hose to fire hydrant.

The loss of caps is very small in St. Louis. We lose about fifteen a year.

James Black, Chief, Grand Forks, N. D.: Chains are provided to prevent the loss of outlet caps. We find them effective where the man filling the flusher forgets to replace the cap. This prevents anyone from carrying the cap off.

We find that during sleet storms, ice forms on the chains and slows up making connections.

We leave the chains off the caps in the business district, as it speeds up making connections. We have not lost any caps.

Charles E. Foster, Chief, Astoria, Ore.: All hydrants in our city are bought with chains.

We have removed them from all hydrants except from roadways over water, where they may accidently be lost. The reason for removing them is that the chains very often interfere with rapid connection to hydrant. The ring on the chain catches at times and time is lost in clearing it.

We very rarely lose a cap. In fact, I do not believe we have lost more than five caps in forty years.

Waldo Merrill, Chief, Council Bluffs, Ia.: In late years, chains have not been provided on outlet caps when hydrants are placed in service.

Chains fastened to outlet caps often become tangled, interfering at times with the removal of the cap. When chains are found, we usually cut them loose from the cap.

I do not recall ever losing a cap from a hydrant. When the outlet cap is removed, it is usually dropped or placed near the hydrant.

P. E. DuPaul, Chief, Vancouver, Wash.: We have no chains on any of our hydrant caps. We have had thirty or forty new hydrants installed during the past two years, and have taken the chains off as they slowed up operations. We probably lose one cap a year in this city of 22,000 population, and 250 hydrants.

G. R. McAlpine, Chief, Oklahoma City, Okla.: We do not have chains on our hydrant caps. Some years ago, we had chains on all hydrant caps, and no doubt some of the old hydrants in the outlying districts still have chains. We did not find them effective when they were on the hydrants. We found that after painting, the chain would not swivel and required breaking. This caused delay in hooking up the hose.

We have not had any caps lost, to my knowledge. This climate, of course, is different than that in some cities as we do not have extended snow storms where snow would be banked around the fire hydrant. This, in my opinion, would create the greatest opportunity for losing caps. However, we carry a spare cap on all engines for use in the event that someone has removed the hydrant cap. I believe all departments should have shut-off nozzles, or spare caps, that could be used. This would eliminate any delay in using the hydrant.

Ernest Yett, Chief, Bremerton, Wash.: We have found that the use of chains are a hindrance rather than a help in our particular case. We remove the chains from the hydrants as soon as hydrants are placed. The chains make the caps hard to remove and slow up the men in making hydrant connections.

Each month, a member of the department makes a trip over the city and checks the hydrant caps for loss and needed repairs. In checking the hydrants, the man makes sure that the caps are in good condition and also greases the ports, threads and caps.

We have been very fortunate in not having any loss of caps. The man making the inspections makes the caps secure, and unless the person removing the caps has the necessary tools, or a hydrant wrench, the caps are very hard to remove.

The Police Department has cooperated with us in all cases where we have had trouble with anyone removing caps. In the past four years, we have not lost a cap or have had any trouble of this nature.

Rue Chrisman, Chief, Roswell, N. M.: Chains are provided on all our hydrant caps. I believe they are very necessary, even though we carry extra caps on our trucks in case of an emergency.

After a hydrant has been freshly painted, we sometimes encounter some difficulty as the cap might not turn freely. We lose very few caps.

L. F. McDonald, Chief, Jackson, Miss.: Chains are provided on our fire hydrants to prevent the loss of outlet caps and we have found them to be very effective, causing no serious interference with the use of the hydrant by the Fire Department.

Ira T. Jones, Chief, Bellingham, Wash.: We originally had chains on all hydrant caps, but found they interfered with removing caps, and so cut them all off years ago. We have not lost a hydrant cap for many years.

Donald J. Rayburn, Chief, El Dorado, Kan.: We have removed all chains from outlet caps on hydrants. They freeze up in cold weather and are a hindrance in the quick removal of caps. We have never experienced any trouble from the loss of hydrant caps.

Richard Widmann, Chief, Madison, Wis.: Chains are provided on our hydrants. We have encountered no interference that is worth mentioning. In fact, we are glad that our hydrants have them.

THIS DISCUSSION WILL BE CONTINUED

Due to the many who contributed to this round table discussion, many of the replies have been held over for the next issue.

C. A. Wolverton, Chief, Port Angeles, Wash.: We have taken off all chains from our hydrants as we believe they interfere with the operation of the hydrant. To my knowledge, we have never lost a hydrant cap.

T. P. Treadwell, Chief, Fort Collins, Colo.: All fire plug caps are attached with chains. The Water Department keeps them in good repair.

We have not had any trouble in removing caps with chains. Since we have been following this procedure, we have not found any rocks or rubber balls in the hydrants, which was the case before we established the monthly fire plug inspection by the Water Department.

Norman C. Pritchard, Chief, Ferndale, Mich.: We have never had chains attached to our hydrant caps, and so far had no trouble with lost caps. We always set our caps up with the hydrant wrench just enough so that children cannot take them off.

Linwood J. Emery, Chief, Sanford, Me.: Chains were provided on all street hydrants in Sanford, Me., but most of them have been removed by Water District employees for the following reasons: The chains proved of no real worth other than that of preventing the cap from falling to the ground when removed; they hindered the hydrant man in his work, by twisting as the cap was turned and thus causing the ring attached to the cap to bind. It was necessary, in many cases, for the man to break the chain with the hydrant wrench in order to remove the cap. I have no knowledge of any hydrant caps being lost since the removal of the chains. I do not recommend chains on any type of hydrant as they serve no real purpose other than to hinder the work of the department.

John C. Long, Chief, Danville, Va.: Our past experience with chains on fire hydrant outlet caps has been that the chains become bent and interfere with the firemen removing them. For that reason, we have discontinued the use of chains. I have found that they are more of a nuisance than they are of value.

In my twenty years in the Fire Department, I cannot recall a case where a hydrant outlet cap has been lost. When we have snow, the man who removes the caps lays them on the running board of the truck.

S. T. Porter, Chief, Washington, D. C.: Outlet caps on all fire hydrants in the District of Columbia are provided with chains to prevent their misplacement or loss. Such a precaution has proven effective and does not in any way interfere with the use of the hydrants by the Fire Department.

Orrin Porter, Acting Chief, Bristol, Conn.: Chains are provided on all hydrant outlet caps. They are found very effective here especially when the ground is covered with snow. They also keep cap threads free from grit.

Hydrants in Bristol are under the care of our local Water Department and periodical inspections are made throughout the year. In cold weather, inspections are made immediately after the hydrant has been used. It is almost an impossibility for such things as bent rings or twisted chains to escape detection.

There has been no time in the past eighteen years that I can recall, where a chain has hindered in any way the operation of a hydrant.

Harry L. Ridout, Chief, Muskegon Heights, Mich.: Chains are provided on all fire hydrants presumably to prevent the loss of caps. They are effective in this regard, although in cases where chains have been broken or removed entirely, we have had no loss of caps.

At times, chains on caps are something of a nuisance, especially when the ring on the cap becomes bent, causing it to bind, or when a paint job on the hydrant causes the ring to stick. Under these conditions, the cap is prevented from spinning freely. This means a loss of time, and causes the man at the hydrant to abandon temporarily his religious training.

Michael Keena, Chief, Hartford, Conn.: Chains are used on all our hydrants to prevent loss of caps. To the best of my knowledge, in the past forty years as a member of this department, I do not know of any caps being lost.

The only interference that I have noticed, is after the hydrants have been painted, and the paint has dried out in good shape. The chain connection on the cap may stick, causing a slight delay in getting the cap off.

Nicholas A. Phelan, Chief, Pittsburgh, Pa.: Chains were provided on all hydrants to prevent the loss of caps, when hydrants are installed.

They are effective in preventing the loss of caps as long as they are on, but we have few hydrants today with chains, due to the fact that persons other than firemen who use the hydrants destroy the chains. As a result, the majority of hydrants are without caps.

We have never had any case where the chain interfered with the free use of the hydrant by the department.

The loss of caps causes the department much trouble and delay, as in many instances we have sticks and stones that have been dropped into the hydrant barrel by children, come up into the hose, and lodge in the nozzle outlet. The greatest offender is the fellow who operates the street flusher.

* * *

Answers to Previous Question

The following replies are in answer to a previous question on the purchase of fire apparatus for volunteer departments:

Lester Van Houten, Chief, Wyckoff, N. J.: In our town, the officials put a certain amount in the budget for the purchase of new fire apparatus. They receive bids and witness demonstrations, and give us what they think best.

At present we are trying to raise money for uniforms, and have tried several things such as a game of chance at an Old Home Week celebration, boxing and wrestling bouts (which did not pay). We now intend to have bingo parties to try to raise more funds.

H. P. Little, Chief, Topeka Township Fire Department, Topeka, Kans.: Our department was organized June 29th, 1939, under a special law passed by the Legislature of Kansas. This law gives township boards of certain townships the right to call special elections to vote bonds to create a fire department in the township. If these bonds carry, the township board is authorized to establish a fire department. The Board of Topeka Township issued $15,000 in bonds and erected a fire station at a cost of $10,100 and purchased apparatus—a 500 GPM pump, a 200-gallon booster tank, and full supply of minor equipment such as ladders, nozzles, etc.; also 1,000 feet of 2½-inch and 300 feet of 1½-inch hose. We have 150 feet of booster hose. The Chief and Assistant Chief are full paid men. We have ten volunteers who are paid by the fire. Our budget for 1940 was $4,500, so we do not have to raise money by giving dances, street fairs, etc.

George Canfield, Chief, Grundy Center, Ia.: The council of our city levies a tax for the purchase of our fire apparatus.

Edward N. Clough, Chief, South Dennis, Mass.: The Town purchases our fire trucks, and to date, we have been well supplied with equipment for a town of our size.

R. M. Carey, Chief, Princess Anne Vol. Fire Co., Princess Anne, Md.: Our municipality does not purchase fire apparatus for our Department. Funds are raised through donations from property owners and entertainments.

We have an American-LaFrance engine that cost $8,000, which has just been delivered to us. Our County Commissioners gave us $3,000 and the rest was raised through donations. Letters were sent out similar to the following one. This has proven the best method of raising funds.

"Dear Mr. Smith:

"More than twelve years ago, the Princess Anne Volunteer Fire Company purchased a fire engine, largely on credit. By holding carnivals, suppers, and by public subscription, we finally paid our indebtedness.

"During that period, that engine has responded to every call that has come in. Most of these calls have been from the rural sections of the county, from Rumbley, in lower Fairmont, to Wenona, the extreme end of Deals Island. Last year, we responded to eighty alarms, fifty-five from outside the corporate limits of Princess Anne. In the twelve years we have owned this engine, we have responded to 544 calls, of which 356 were in the rural districts.

"As a result of the work it has been called upon to perform, our equipment is about depleted and it is essential that it be supplemented. The tires on our present engine are more than six years old, and it is manifestly unsafe to take it on the highways at the speed required.

"We contemplate purchasing a new engine that will cost approximately $7,500. This will be equipped with a supplemental tank to carry about 400 gallons of water and equipment to attach to an open well or stream for the primary purpose of fighting rural fires.

"The County Commissioners have agreed to give us $1,000 annually for a period of three years to apply on the purchase price. We will obligate ourselves to pay the balance, believing that in reponse to this letter, property owners in the county will lighten

(*Continued on page* 39)

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of December, 1940. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending December 31	Loss in Thousands of Dollars
Grafton, Mass.—Historic Mansion of H. W. Smith's Londvale estate, destroyed	50
Carleton, Mich.—Kahlbaum grain elevator and mill, destroyed	50
Franklinville, N. Y.—Four frame buildings, destroyed and two brick buildings, damaged	50
Madera, Cal.—Theatre and five business establishments, destroyed	125
Los Angeles, Cal.—Gilfillan Bros. Mfg. Co.	400
Shreveport, La.—Allen Mfg. Co., storehouse.	70
Evanston, Ill.—Northwestern University Technological Institute, damaged	1,000
Bridgeport, N. S.—Immaculate Conception Church, destroyed	150
Los Angeles, Cal.—Reliable Aluminum Ware Co.	50
Muskegon, Mich.—Willard Hotel, destroyed.	50
Astoria, L. I.—Roman Macaroni Co., destroyed	250
Newton, N. J.—Business building, destroyed	65
Chehalis, Wash.—Boone garage, destroyed	50
Somerville, Mass.—Garage and trucks, destroyed	200
Norwich, N. Y.—Business building, destroyed	65
Cleveland, Ohio—Warehouse, destroyed	50
Hamilton, Ont.—Knox Presbyterian Church, destroyed	80
San Francisco, Cal.—Cotton warehouse, destroyed	165
Philadelphia, Pa.—Philadelphia Steel Abrasive Co., damaged	50
Edmonton, Alta.—Grain elevator, destroyed	50
Bay City, Mich.—Oil well drilling equipment, destroyed	50
Hudson, N. C.—Rural high school, destroyed	50
Denver, Col.—Warehouse, destroyed	50
Gardiner, Me.—Business Buildings, destroyed and damaged	75
Vineland, N. J.—Hotel and business buildings	175
Pottstown, Pa.—Business building, destroyed	50
Cottom, Ont.—Essex Hybrid Seed Corp. Co., Ltd., destroyed	55
Malagash, N. S.—Power plant of Malagash Salt Co., destroyed	50
Waterloo, Ia.—Hawkeye Hotel building, destroyed	75
Cascades, Md.—Eader Textile Corp. plant, destroyed	65
Chicago, Ill.—Industrial plant	50
Antrim, Pa.—Antrim Coal Co. buildings, destroyed	50
Akron, Ohio.—Rubber yard, damaged	50
Benton Harbor, Mich.—Business building, destroyed	50
Sunbury, Pa.—Furniture warehouse	100
Connersville, Ind.—Department store, damaged	80
San Joaquin, Cal.—Alta winery, destroyed	150
Madrid, Ia.—Business building, destroyed	80
Hoboken, N. J.—Condenser Service and Engineering Co.	100
Ottawa, Ont.—Building housing militia units, damaged	60
Cisne, Ill.—Lumber yard and business buildings destroyed	200
Barnesboro, Pa.—Business block, destroyed.	80
Montreal, Que.—Three story house, damaged	80
Caldwell, Idaho—Furniture store, destroyed	80
Marshall, Tex.—Two business buildings, destroyed	80
Regina, Sask.—Warehouse, damaged	80
Whitehorse, Y. T.—White Pass and Yukon Airway hangars, destroyed	80
Marshalltown, Ia.—Parochial school destroyed	50
Parsons, Kan.—First Baptist Church, destroyed	50
Fayetteville, N. C.—West Lumber and Box Company, destroyed	50
Spokane, Wash.—Business establishments and apartments, damaged	80
Somerville, Mass.—Garage housing twenty-four trucks	80
Norton, Va.—Theatre building, damaged	60
Petaluma, Cal.—Straub egg hatchery, destroyed	50
San Rafael, Cal.—Mill and lumber company yards, damaged	50
Chicago, Ill.—Business building, damaged	75
West New York, N. Y.—Devonsheer Melba Corp., destroyed	80
Kinston, N. C.—New York Clothing Co., destroyed	50
Baltimore, Md.—Automobile salesroom and repair shop, destroyed	100
Exeter, Pa.—Breaker building and boiler house	250
Mars, Pa.—Best-O-Bric Co., destroyed	50
Ridgeway, Pa.—St. Leo's church, destroyed	175
Elba, Ala.—Goodman school building, destroyed	50
Hopewell, Va.—Hopewell municipal armory, destroyed	100
Alton, Me.—Acme Bowling Alleys, destroyed	50
New Florence, Pa.—New Florence High School, destroyed	60
Wilkes-Barre, Pa.—Colliery and breaker, destroyed	150
Watkins Glen, N. Y.—Business block, damaged	50
Fairmont, N. C.—Wholesale and retail store, destroyed	85
Norton, Va.—Business building and apartments	60
Westline, Pa.—Union Charcoal Co.'s acetic acid plant, damaged	50
St. Paul, Minn.—Business buildings damaged	50
Conway, S. C.—Business shops, damaged	100
Peoria, Ill.—Newberry five and ten cent store, destroyed	110

Macaroni and Flour Make Big Blaze

Tons of macaroni and flour were fuel for a spectacular fire which occurred early in December in Long Island City. The four-alarm fire, which was the first that has occurred in that district in six months, reached such serious proportions that Assistant Chief J. J. McCarthy dispatched companies to patrol the surrounding area to prevent the further spread of fire by sparks that were being carried hundreds of feet in the air.

The fire was located in the heart of the factory section. A water screen of five lines was effective in preventing the blaze from leaping the intervening space between the factory and a plant manufacturing photographic materials for the army.

The building, which was of modern construction, three stories high, having a floor space of 10,000 square feet was fully involved when the first alarm companies arrived. The fire was believed to have originated in a lumber yard to the rear, and entered the cellar. Effective streams were delivered from the four deck pipes operating in the front of the building and three in the rear. The temperature was below freezing so that things became pretty well coated with ice by the time the fire was brought under control.

Training School Planned

The executive committee of the Ulster County Volunteer Firemen's Association met at Kingston, N. Y., recently and formulated plans to institute a volunteer firemen's training school in Ulster County in 1941. It was unanimously agreed that such training is more essential today than ever before because of the added importance of fire protection in its relation to the preparedness program. Retired Battalion Chief James Deasy will be the school instructor.

Turned in False Alarm on Way to Church

An eleven year old Bridgeport, Conn., youngster who henceforth "will fly" past fire boxes, told the police authorities in that city that he sounded a false alarm on his way to a church religious school class.

"I watched the fire engines and then I went to the church and I asked God to make me a good boy," he told detectives." I was sorry. I knew I was a bad boy," he added.

Police said the boy and a fourteen-year-old companion, both pupils in the same school, turned in the false alarm and then ran as the apparatus was on its way to the call. The boys' then stopped at the church to attend religious class.

"The next time I pass a fire box," said the younger boy, "I'm not running —I'm flying by."

THOMAS F. MAGNER.

Firemen Are Shown Taking a Line to the Roof at the Macaroni Fire in Long Island City

CONFLAGRATION PREVENTED BY ROCHESTER, N. Y., DEPARTMENT

Five Alarms Sounded for Blaze Which Started in Store and Involved Five Other Business Places

ROCHESTER, N. Y., had its first five-alarm fire in five years recently when an early morning fire visited that city, leaving an estimated loss of approximately $300,000.

The first alarm was transmitted by a citizen at 5:53 a. m. followed by a 3-2 at 6:08 a. m. At 6:35 a. m. a 3-3 alarm was transmitted by George N. Fletcher, Chief of the Department.

Sizing up the extent of the blaze at 7:00 a. m., Chief Fletcher ordered a 5-5-5 alarm, giving him a total of about 200 men, thirty-five pieces of apparatus, and about twenty-five members of the Protectives, a volunteer organization. The fire was believed to have started in the basement of a Linen Mart by a defective heating unit and was said to have had a good hour's start before the first firemen arrived on the scene. Before the blaze was finally extinguished, at least five mercantile establishments were virtually ruined and many others were damaged by water and smoke.

In addition to toppling walls, the fire fighters were greatly hampered by a twenty degree temperature which caused the spray from the many tons of water to freeze on the ladders and equipment, coating them with a thick crust of ice.

Fire walls were given credit for saving other buildings in the block from becoming involved. Chief Fletcher pointed out also that the Fire Department did a fine piece of work in stopping what threatened to be a conflagration. It is interesting to note that the five alarms left only four engines to cover the whole city, and just within the last few weeks, a large civic organization had suggested that the Fire Bureau be reorganized to reduce the number of engine companies. This fire was a very effective demonstration of the necessity of maintaining full fire fighting strength.

Although Chief Fletcher reported the spread of the blaze had been checked by 7:30 a. m., the last hose line was not shut off until 7:30 p. m. Most of the apparatus reported back to their stations by three in the afternoon. At about 11:00 p. m. one truck was recalled to the scene when a minor renewed outbreak of fire was discovered, but this was quickly extinguished.

Part of a Large Crowd Which Gathered to Witness the Operations of the Firemen

An Aerial View of the Fire Shows Firemen Pouring Large Quantities of Water Into the Blaze

Fire Engineering Index Available

The index to Volume 93, Fire Engineering, is now available, and will be mailed to those who request a copy.

Pittsfield, Mass., Adds Equipment

A new Peter Pirsch 1000-gallon pumper was received by the Pittsfield, Mass., Fire Department. In November, a hose wagon was made into a high pressure wagon by a permanent mounting of a deck gun, which is capable of delivering from 1,200 to 1,500 gallons of water a minute. These two trucks are expected to add much to the department's efficiency.

Greene County Holds School

An examination followed the conclusion of the Greene County, N. Y., Volunteer Firemen's Training School. Upon the final ratings, an oral examination was conducted to determine the winner of the cup donated by President Charles Stewart of the Greene County Firemen's Association. Fire Marshal Baker was the winner with Fireman Raymond Place, Catskill, a close second, and Fireman Baldwin, Tannersville, next in line.

Among the Fire Fans

By Otis Smith

A FIRE fan group has been organized in Washington, D. C. The name of the club is the Friendship Fire Association. Dr. Edward R. Gookin, 1113 Sixteenth St., N. W., heads the new group. Two other organizers are Robertson Page, National Press Club, and James W. Hurlbut, head of the CBS news room in Washington.

The many friends and acquaintances of Frank J. Huber, formerly of Chicago, will be glad to know that he is again in the running. Mr. Huber now lives at 215 "D" St., Laporte, Ind. A two-years' illness prevented Mr. Huber from following the buff hobby until recently.

It is reported that Al Fryer, former head of the San Francisco Phoenix Society, is now residing in Chicago. Mr. Fryer's new address is Fire Protection Co., 6601 South Narragansett St., Chicago, Ill.

A recent meeting of the Phoenix Society proposed a motion to appoint a committee to investigate an arson investigation bill, to be presented in the California State Senate. It contains the right of the State Fire Marshal to subpoena a suspect. It points out that local authority ends at the city limits and this added help is needed in solving crimes of arson. In this connection, a school of arson detection is being operated by the state at this time. The committee is to be appointed to determine municipal benefits, if any.

Member Roy Coon has been appointed to the position of Advisory Fire Protection Engineer at Training Camps in the vicinity of San Francisco. His duties consist of frequent inspection trips to various posts. All of this keeps Roy very busy as he is responsible for the efficiency of the equipment and facilities in these posts.

Another fire telegraphy fan is John D. Woodward, Lock Drawer No. 230, Hackettstown, N. J. Mr. Woodward is like many other buffs, including this writer, who find the study and following up of alarm systems, to be of more interest than actually going to the scene of the alarm. O. E. Bowman, 135 W. 56th St., New York City, also is interested primarily in the alarm end of the buff hobby. Mr. Bowman is a control man at NBC headquarters in Radio City.

The Baltimore, Md., Fire Department has placed six new aerial tractors in service. The new tractors replace ones proven to be too weak for the job. Painted all white, with gold trim, the new tractors are the pride and joy of the shop. Trucks 1 and 2 have the most powerful tractors; 195 hp Macks. Trucks 3 and 5 have American-La France power, while Trucks 6 and 7 have Seagraves.

Other jobs to come out of the department shop recently are Engines 22 and 40. These Ahrens-Fox pumpers have been rebuilt from the ground up. Truck 14 and Hose 3 are also being reconditioned. They are due for pneumatic tires, steel bodies, booster pumps, and other improvements.

The correct address of Howard Larcombe is 227 Granville Dr., Silver Spring, Md. Model builder Art Cline lives at 46 Farragut Pl., N. W., Washington, D. C.

Thanks to H. J. Harding, Revere, Mass., for his request for alarm information. . . . Note to Howard Dillinger, 2277 Vine St., Cincinnati, Ohio, when addressing mail to this writer "in care of," kindly make it in care of this magazine at its New York address, and not in care of the Baltimore Fire Department. Yours was the second letter so addressed and the department clerk may get the wrong impression. . . . The Fire Bell Club, New York City, has appointed Gordon Mullins as a sort of public relations man. Mr. Mullins has authority to issue the official news releases as given him by the Secretary.

From Capt. Wm. Paul Babcock, we have the December issue of The Blanket, as published by the Rockland County Emergency and First Aid Council, New York State. Mr. Babcock conducts the paper in an informative and entertaining manner.

Fire Specialties, Box 82, Pearl St. Sta., Portland, Maine, sent a copy of their fire record book. The record will come in handy to firemen and buffs who wish to keep a personal record of their activities.

New emergency signals have been established in the Boston Fire Department for use when an emergency exists. Ten consecutive blows followed by the signal number will be struck two rounds on all tappers. The Fire Alarm office will notify the Bureau of Operations of the Boston Police Department who in turn will notify all police cars. These police cars will assist in notifying the various men and officers who are off duty. Fire Alarm will also notify the various broadcasting stations who will be requested to broadcast the notification that all off-duty men are to report.

Following are the signals:

10-21 All members remain on duty.
10-22 Recall all members off duty.
10-23 All recalled men join their own companies.

(*Continued on page* 38)

47TH
FIRE FACTS
BY OTIS SMITH
THANKS TO I.H.C. AND J.E. PARAS FOR DATA ON 46TH FIRE FACTS ITEM.
ABOUT 25 YRS. AGO, THE MARTIN CARRIAGE WORKS, YORK, PA., BUILT MOTORIZED STEAMERS AND SOLD THEM TO VARIOUS FIRE DEPARTMENTS IN PENNA.
THE ONE ILLUSTRATED IS HELD IN RESERVE BY VIGILANT ENG. #1, YORK, PA.
ACCIDENT STARTS FIRE TWELVE MILES DISTANT
AS TOLD BY BEN ELLIS OF BOSTON.
IN NEEDHAM, MASS., 12 MILES FROM BOSTON, AN AUTO ACCIDENT BROUGHT HIGH TENSION WIRES IN CONTACT WITH POSTAL TELEGRAPH WIRES. AS A DIRECT RESULT, WIRES CAUGHT FIRE IN A POSTAL TELEGRAPH MANHOLE AT STATE AND CONGRESS STS., BOSTON.
DATA: DEC. 11, 1940. 1 P.M.
BOX 1281 - STATE ST., OPP. KILBY.
E. 4, 6, 25; LADDER 8, 24; TOWER 1; RESCUE 3.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Removing Water from a Closed Tank

To the Editor:

Can a 3,000-gallon water tank with 2,000 gallons of water in it, be sucked out by a 500-gallon pumper with a 2½-inch suction hose with 1½-inch nozzle with ½-inch tip. Will the tank collapse if we do not vent it? The tank has a 2-inch outlet which supplies a school. An electric pump supplies the tank. We want to run a 2½-inch pipe out through the wall so that we can connect it to our fire truck. J. W.

Answer: If no vent is provided in the tank, a pumper could remove water from the tank to a point where the pressure within the tank would be insufficient to force the water up to the pump. It is assumed that a pump, in good condition, can lift water twenty-five feet, which represents a static pressure of ten pounds per square inch.

A pump drafting water from a tank should be able to reduce the pressure within the tank to a point such that the exterior pressure would be approximately ten pounds greater than the interior pressure. Thus the tank would have to sustain a pressure of ten pounds per square inch of its surface, if it were not to collapse. Whether or not the tank would collapse under these conditions can only be determined by actual test, for no information as to the design of the tank, thickness of plates, and reinforcing, are given.

To enable the pumper to remove water from the tank, a vent should be provided.

Without a vent, under ideal conditions, and with no appreciable lift from the tank up to the pumper, the pumper should be able to remove about two-thirds of the water.

Pumpers in Tandem

To the Editor:

If you were pumping with a 1,000-gallon gear pump into a 750-gallon centrifugal two-stage pump, would the pressure on the discharge be equal to the pressure on both pumps? Is there any loss between the two pumps? Would it be any difference if you were pumping from the 750 into the 1,000? Would this be equal to a high pressure pump? Would it be called tandem if you had the piston pumpers hooked from engine to engine? W. B.

Answer: If a 1,000-gallon gear pump were pumping in tandem to a 750-gallon centrifugal pump, the discharge pressure from the centrifugal pump would be approximately equal to the sum of the pressures on the two pumps. Of course, there would be a small loss due to the friction in the connections, and through the second pump, but it would not be material.

On the other hand, if a 750-gallon centrifugal pump were pumping into a 1,000-gallon rotary gear pump, the discharge pressure on the rotary gear pump would be considerably less than the sum of the pressures of the two pumps. Pressures are not transmitted without diminution from one pump through a rotary pump.

If piston pumpers were connected in tandem, the discharge pressure of the second would not be equal to the sum of the discharge pressures of both, for piston pumpers do not utilize all pressure delivered to them.

Factors for Small Lines

To the Editor:

What are the factors for changing one, two, three and four lines of 1½-inch hose to 2½-inch hose? What is a water thief? J. C.

Answer: Factors for changing 1½-inch rubber lined hose to 2½-inch rubber lined hose are as follows:

Single line of 1½-inch to single line of 2½-inch, factor .074.

Factor for changing two parallel lines of 1½-inch hose to a single line of 2½-inch hose is .266.

Factor for changing three lines of 1½-inch hose to a single line of 2½-inch hose is .574.

Factor for changing four lines of 1½-inch hose to a single line of 2½-inch hose is .918.

A water thief is a fitting which permits the taking of two small lines of hose off a single larger line by use of independent gate. The two small lines can be operated while the large line is still in service, if desired.

Deodorizing After Fire

To the Editor:

What will remove the odor of smoke from the interior of a building after a fire? C. S.

Answer: So far as we know, there is no successful method for removing the odor of smoke from the interior of a building after a fire. About the only procedure that has ever shown even a partial result is the complete airing of the building.

Salvage men have been faced with this problem for years, but no solution has been found for it.

One of the reasons for the difficulty in removing odor is the tendency of porous materials to absorb the volatiles thrown off at a fire, and which possess penetrating odors. Were it possible to heat such material to a high temperature, the troublesome ingredients would be expelled. This is, however, an impractical process.

Conversion Factors and Values of "K"

To the Editor:

What is the value of "K" for the following nozzles on 2½-inch hose: ¼-inch, ⅜-inch, ½-inch, ⅝-inch, ¾-inch, ⅞-inch and 2½inch.

A 50-foot length of 2½-inch hose is attached to a hydrant. The hydrant is open and the pressure is 48 pounds. What would be the value of "K" for the open butt? How many gallons per minute would there be and what is the friction loss?

What is the formula for converting ½-inch and ⅝-inch hose into 2½-inch rubber lined hose?

What is the value of "K" for a nozzle on four parallel lines of 2½-inch hose? S. H.

Answer: The values of "K" for various size nozzles on 2½-inch hose, secured by multiplying the diameter of the nozzle by itself four times and dividing by 10, are as follows:

Nozzle Diameter	"K"
¼	.0004
⅜	.003
½	.00625
⅝	.0152
¾	.0316
⅞	.0586
2½	3.9

"K" for 2½-inch open butt on 2½-inch line is 3.35.

Nozzle Pressure = Engine Pressure ÷ (1.1 + KL)

N. P. = 48 ÷ (1.1 + 3.35 × 1)

= 48 ÷ 4.45 = 10.8 pounds approximately.

The friction loss is then equal to 48 — 10.8, or 37.2 pounds.

Discharge = $29.7 \times 2.5 \times 2.5 \times \sqrt{10.8} \times .90$

=548 gallons per minute approx.

The factors for converting ½-inch to 2½-inch hose is .00032.

The factor for converting ⅝-inch to 2½-inch hose is .00975.

In the absence of experimental figures on the relative friction losses, these factors have been secured from the rule that friction loss varies inversely as the fifth power of the diameters of the line.

The factor for 4 parallel lines of 2½-inch hose is 12.4. The lines may first be

reduced to 2 parallel lines by dividing by 3.6. These two parallel lines can be reduced to a single line by dividing by 3.6 again.

There is no value of "K" for a nozzle on 4 parallel lines of 2½-inch hose.

Small Line Calculations

To the Editor:

Will you give me the following factors for "K" on ⅝-inch, ¾-inch and ⅞-inch nozzle, using a single line of 2½-inch hose. Are there rules to use when the above nozzles are employed in regard to friction loss per hundred feet when attached to single lines of 2½-inch hose? Can more nozzle pressure be used on ⅝-inch and ¾-inch tips than on 1⅛-inch and 1¼ inch tips? Say 70 to 80 pounds against 45 to 50 pounds?

One of our engine companies operated a layout using 1900 feet of 2½-inch hose, ¾-inch tip, at 200 pounds engine pressure. Will you please give me the nozzle pressure and also the discharge?

G. C. G.

Answer: The values of "K" for ⅝, ¾ and ⅞-inch nozzles on single lines of 2½-inch hose are as follows: ⅝-inch nozzle, 0.0152; ¾-inch nozzle, 0.0316; ⅞-inch nozzle, 0.0586.

All of these values of "K" are based upon the rule of multiplying the diameter by itself four times and dividing by ten ($d \times d \times d \times d \div 10$).

By use of Underwriters' formula and the above values of "K", fairly satisfactory values for nozzle pressure, or engine pressure, can be secured. When the discharge from the nozzle is known, friction loss can be found by the usual formula, namely, friction loss per one hundred feet of 2½-inch hose is equal to $2 \times q \times q + q$, where q is the flow in hundreds of gallons per minute.

For small flows, the formula is friction loss per hundred feet of 2½-inch hose $= 2 \times q \times q + ½\ q$.

Higher pressures are better on larger nozzles than on small nozzles. For ⅝ and ¾ inch nozzles, a pressure of 40 pounds would be entirely satisfactory. Little is gained by increasing the pressure at such small nozzles to higher points.

With regard to the problem you give, it is solved as follows:

N. P. $=$ E. P. $\div (1.1 + KL)$

K, for ¾ inch nozzle on 2½-inch hose is .0586.

L $= 1900 \div 50 = 38$

E. P. $= 200$ pounds

Then N. P. $= 200 \div (1.1 + .0586 \times 3.8)$

$= 200 \div 3.3$, or 60 pounds

Discharge $= 29.7 \times d \times d \times \sqrt{p}$

$= 29.7 \times ¾ \times ¾ \times \sqrt{60}$

$= 129$ gallons per minute approximately.

Pump Discharge at Different Pressures

To the Editor:

It is a known fact that a rotary gear pump is so geared that when in "pressure" it revolves slower than when in "capacity." Why should a slower revolution produce increased pressure? Would not the gear teeth, moving more slowly, kick the water more slowly? As an example: A rotary gear pump with churn valve open; all discharge gates closed. The engine is revolving 1500 times per minute. The pump in "pressure" is going 500 r.p.m. and the water in that pump registers a pressure of 300 pounds, i.e., the water in the pump is churning around with 300 pounds pressure.

Now put the pump in "capacity." The pump is now going 750 r.p.m., but the water is churning around with a pressure of only 120 pounds inside the pump, although the gear teeth are churning the water faster. What is the explanation?

A. S.

Answer: The output of any fire engine is determined by the power of the motor. The power output, or water horsepower, is a product of the discharge pressure in pounds per square inch times the gallon flow per minute, divided by 1,715. At low pressures, for a given horsepower, the fire engine can discharge an indefinite quantity of water. As the discharge pressure is increased, either by the use of longer lines, or smaller nozzles, the quantity which the pumper can discharge is reduced. Thus, when you make a long stretch from the pumper and put on the small nozzle, higher engine pressure is created. With a higher pressure, the discharge drops.

Specifications for motor fire apparatus call for the pump to discharge its capacity at 120 pounds per square inch; half its capacity at 200 pounds per square inch and one-third its capacity at 250 pounds per square inch. These specifications are based upon the power of the motor. If the motor had unlimited power, it could discharge its full capacity at 250 pounds per square inch.

In order to enable the motor to continue to operate when the discharge pressure is increased, it is necessary to change the gear ratio so that greater pressure can be secured. With this change of the gear ratio to "pressure," the discharge is decreased, but the motor continues to operate at an efficient speed, because the power it is required to deliver to the water is not increased.

Fort McClellan to Have Large Department

One of the largest army Fire Departments in the country will be located at Fort McClellan, Ala. At the present time, there is one modern fire station housing two pumpers, but seven new fire stations are being built which will house six new pumpers and an airport truck. Six of the new stations are located in the camp, which covers 53,000 acres, and the other station is located at the airport. Seventy new men will be added to the department. All of the department officers are from the 27th Division New York National Guard.

CHARLIE HAYES.

Company Distribution Map

A new streamlined, electrically-operated map of the city has been put into operation in the City Hall fire alarm office in Chicago by Fire Commissioner Michael J. Corrigan, and William A. Jackson, Superintendent of Electricity.

The map is fastened to the north wall of the fire alarm office and is twelve by seven and one-half feet in size. It is made of Formica. The map is black with white lines pressed in to it to mark off each square mile. The lakes and rivers are done in blue while the parks and boulevards are shown in green.

Electrically Operated Fire Company Distribution Map

John T. Gegan, Chief Fire Alarm Operator, Chicago Fire Department, points to lighted discs on the map. In the foreground is the desk which houses the cams for operating the lights.

Set into the map is an electrically lighted disc for each engine or truck company so that operators may determine at a glance which companies are available for duty. White discs bearing red numbers and red discs with white numbers represent engine and truck companies, respectively. Every disc on the board lights up when a panel, built into a desk in front of the map, is pushed into position.

When the panel is moved, rows of cams or switches, one for each company, are revealed to the operator. In event of an extra alarm fire, the discs representing companies responding to the various alarms are extinguished by moving the proper cams. The map then indicates to the operators just which districts are left unprotected and companies are moved up to afford fire protection to the stripped area if the automatic 'move-up" designated on the box cards has not already taken care of it.

Each cam has a removable numbered cap. If, for example, Engine 13 is in quarters, the disc representing that company on the map remains lighted and the cap numbered 13 remains on the

(Continued on page 37)

WESTCHESTER COUNTY PLAN MEETS AT MAMARONECK, N. Y.

"Questions and Answers" Prove Interesting Feature of Monthly Gathering of Group

THE November meeting of the Fire Chiefs' Emergency Plan of Westchester County, N. Y., was held at the Weaver Street, Town of Mamaroneck Fire Headquarters on November 20. Chief Wm. McCarthy was host and 155 members and special guests were in attendance.

Prior to the meeting, the members inspected Weaver Street's new 100-foot aerial all-metal ladder.

The Board of Trustees reported on its November meeting. It was decided to make the December meeting "Commissioners' Night" to bring together Chiefs and Fire Commissioners, most of whom are members of the Plan, under the sustaining membership arrangement.

The meeting was opened by President William Livingston, the members being welcomed by Chief Wm. McCarthy and, later, by County Supervisor Bert McCulloch and other members of the Town Board.

Aid to Aviation Service

There was some discussion concerning the extent of service fire departments should render in the event aircraft had to make emergency night landings on unlighted county land. Recently it was believed a plane was seeking a landing field, and firemen were rushed out to attempt to light a field that might be used in the emergency. Their efforts, however, proved fruitless and unnecessary. It was suggested that the Plan consider the best method of meeting such emergencies.

It is expected that the new constitution and bylaws will be ready for discussion at the next meeting.

Chairman Van de Water of the Program Committee, introduced a new technique in handling the program, which was built around the "Questions and Answers" idea. The month previous, questions taken from the "Question Box" were allocated among certain members for reply and at this meeting five selected questions were actively discussed by the members after each was covered individually by the report of the Chief selected by the Committee for the purpose.

Questions Discussed

The five questions were:

1. In extinguishing what kinds of fires is it inadvisable to use water? Handled by Chief McGovern.

2. In small villages where a horn is used to call volunteer firemen, is it advisable to make a code signal known to the general public? Handled by Chief Gross.

3. What convenient ways are there for marking at a night fire, a central point of command or headquarters when outside help has been requested? Handled by Chief Doughty.

4. How can connections be made between two 2½-inch couplings when one is a N. Y. thread and the other a N. S. thread? No Cooper Hose Jackets and only one thread adapter operating in the wrong direction, are available? Handled by Lieut. Howson and others.

5. In small villages where firemen are called to fires by sounding alarms on a horn, is it advisable to use a regular box call to summon members of the department for a drill? Should the fire alarm system be used for anything but emergency calls? Handled by members.

These questions provoked considerable discussion and it was felt that between the discussion and the reports on the questions by the individual chiefs, the program of the evening was most successful.

Members were urged to caution merchants in their communities to be careful of Christmas store decorations. It was decided to purchase Christmas seals, as heretofore.

Reporting for the special war emergencies committee, Chief Roi Woolley pointed to confusion that exists throughout states and counties on the question of defense against bombing and sabotage and over what shall be done in the event war ensues. He praised the well-intentioned individual and group efforts but pointed out that much of it was misdirected, and there was need of some unified, coherent action, to be taken by the Emergency Plans and other defense organizations now in existence. At present, the whole picture is badly scrambled, with no head, no authority, no intelligently planned objectives, except for the suggestions of the International Association which, in too many cases, do not lend themselves for adoption by small communities.

According to Chairman Woolley, his committee has approved the preparation of the completed Fire Chiefs' Emergency Plan for meeting not only emergencies arising out of conflagrations, but of all others, from flood, hurricane, etc., to war. The proposed plan, which has been in preparation three years, takes the best of the various other "major disaster plans" now in effect, and adapts them to the requirements of communities such as abound in Westchester County. It calls for setting up "Major Disaster Councils" in each community, operating some seven units, each under a governing head, with assistants, and it outlines not only every emergency that might arise, but the procedure for meeting them, and—what is most important—it makes it possible for those in authority to work quickly, easily locate all the help, both human and material, that may be needed. This is where most other "disaster plans" are lacking.

The committee's preliminary plans will be submitted to the Board of Directors at the next regular meeting, then, after adoption, will be presented to the members for ratification. Funds to meet the expense of the work are already available.

Fireman Demonstrates Learning

Wendell D. Corwell, who is a member of the Hancock, N. H., Fire Department, gave an unscheduled demonstration in the art of fire fighting while on his way to the annual outing of the New Hampshire Fire Chiefs' Association at the Hotel Ashworth, Hampton Beach, N. H. As he was about to enter the Ashworth, he spied an awning on fire at a nearby hotel. While confused spectators turned in three alarms, he proceeded to put out the blaze before the arrival of the apparatus.

Apparatus of the Monticello, N. Y., Fire Department

The three pieces of American-LaFrance apparatus pictured are a 750-gallon pump, a 600-gallon quadruple combination and a 750-gallon pumper which are new additions just recently purchased by Monticello, N. Y. The village now has two paid drivers, the balance of the company being volunteers.

61 *Basic* MODELS

FROM WHICH TO CHOOSE

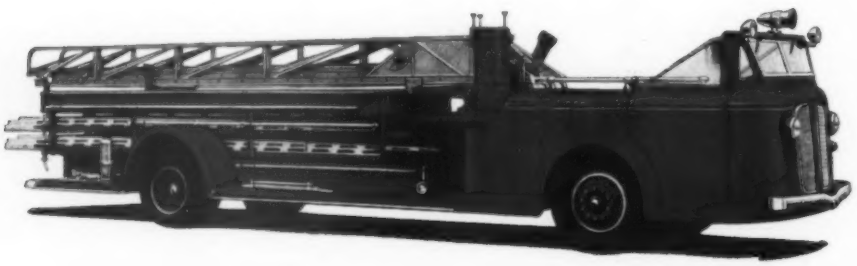
AMERICAN-LAFRANCE has made available for you the largest selection of completely engineered fire apparatus ever offered for fire service.

Streamlined Pumping Engines
500 G.P.M. to 1500 G.P.M. Capacity

The range in capacity and price is complete. The line includes booster and hose cars, squad, salvage and emergency rescue or disaster cars. Pumping engines are furnished in the open seat type all-steel cab and sedan type. Equipment is also available for commercial chassis mounting.

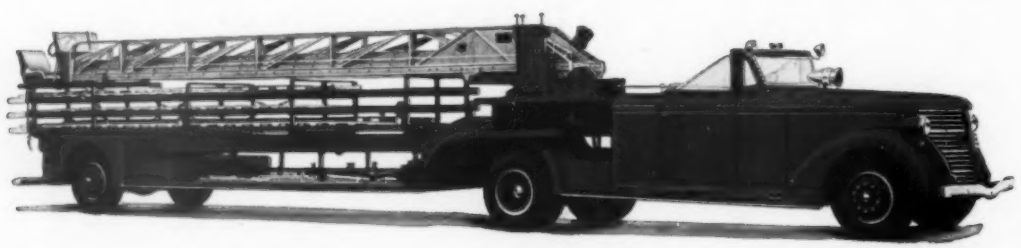
•

Service aerials are available with many proved exclusive American-LaFrance features.



Ultra-Modern Service Aerials
All-Steel Aerial Ladders 65 ft. to 100 ft.

Short overall length, excellent visibility, complete hydraulic power for one-man aerial ladder operation, short turning radius, full equipment and ground ladder capacity, good performance range insured by the V-12 motor. These are a few of the American-LaFrance features.



Tractor-Drawn Aerial Ladder Trucks All Steel Aerial Ladders 85 ft.-100 ft.-125 ft.-150 ft.

Safety and stability with easy smooth operation for both rescue and water tower work, characterize American-LaFrance all-steel aerial ladder trucks.

Standardize on AMERICAN-LAFRANCE

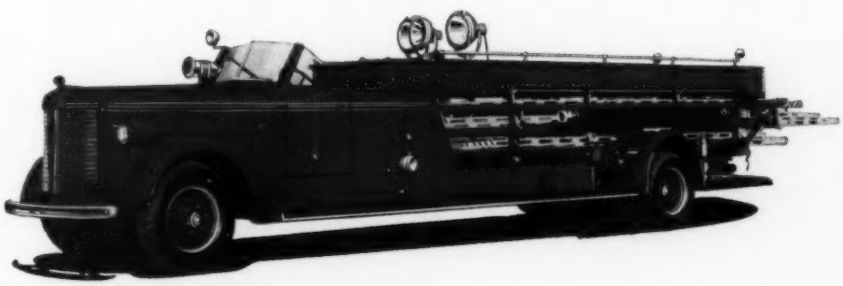
All Your 1941 FIRE APPARATUS CAN BE SUPPLIED BY AMERICAN-LAFRANCE

If you like the conventional type of fire engine with running boards — American-LaFrance builds it too! But important too is the fact that all models and equipment built by American-LaFrance are manufactured to conform to the same high standards of workmanship and materials which have made American-LaFrance the standard of quality the world over.

Conventional Type Pumping Engines
Capacities 500 G.P.M. to 1000 G.P.M.

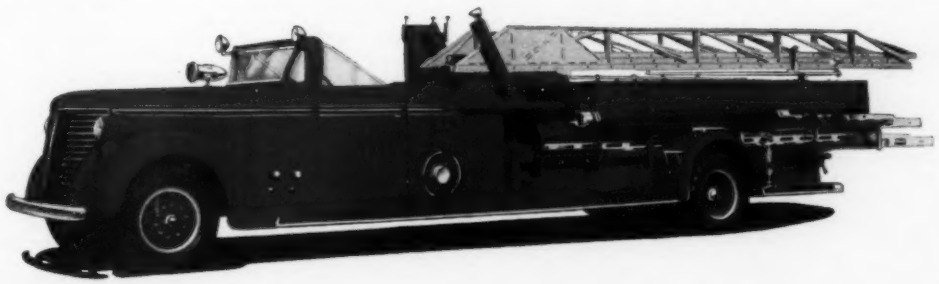
Many thousands of dollars are expended annually in engineering development by American-LaFrance to produce the

WORLD'S FINEST FIRE ENGINES



City Service and Quadruple Combination Ladder Trucks
240-ft. Ladders, Pumping Capacity 500 G.P.M. to 1500 G.P.M.

Write us for photos and specifications for your needs. No obligation.



Quintuplet Combination — 65-ft. All-Steel Aerial Ladder, Ground Ladders, Pumping Capacity 500 G.P.M. to 1000 G.P.M. 1000-ft. Hose Body and 100-gallon (U. S.) Water Tank.

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DRAMATIZED FIRE FIGHTING BROUGHT TO 500,000 HOMES

Steps in the Control of a Mock Fire at Drill Tower Broadcast as Fire Prevention Week Feature

MORE than half a million people heard the dramatized fire fighting demonstration of the Shreveport, La., Fire Department on October 9 as a high light feature of the 1940 Fire Prevention Week, directed by Chief S. J. Flores and the Fire Prevention Committee of the Chamber of Commerce, and broadcast over Radio Station KTBS, powerful transmitter in the Central South.

Looking for a new feature that would bring fire prevention and the effectiveness of the fire department to the attention of the citizenship as a whole, the use of a radio broadcast, giving a play by play account of a major fire, was hit upon. Jerry Bozeman, one of the ace radio commentators of the south, was generously provided by John McCormack, General Manager of the Tri-State Broadcasting System, and a thirty-minute radio program starting at 8:00 p. m. was given by the civic minded owners of the station.

Show at Training Tower

The Central Training Tower of the Shreveport Fire Department was selected as the scene of the demonstration. Due to the limited area for spectators, Chief Flores was forced to request local audiences to stay away from the scene of the radio show.

At eight o'clock sirens boomed and chemical smoke bombs were set off in the training tower. Under glaring emergency lights set up by the fire department, the whole scene was one of mile-a-minute action. Photographers' flash bulbs were popping, the big eighty-five-foot aerial truck threw up its ladder and a rescue was made; hose lines were laid and men rushed into the smoke oozing tower. Step by step the radio commentator, fitted out in firemen's slicker, boots and helmet, moved the microphone into the heat of the battle against smoke and fire. Thousands of Central South listeners sat on the edge of their chair as the daring action of the firemen was brought into their front rooms.

In seconds, roaring pumpers threw thousands of gallons of water against the simulated burning tower. In the midst of all the flurry, drenched radio men carried every move of the laboring firemen. Chief Flores stationed himself next to the microphone and his orders shouted to the Captains were carried to the radio audience.

Large Crowd Attends

The publicity on the show had attracted too much attention to turn the local crowds by a mere request that they not witness the demonstration on the penalty of getting drenched. Hundreds of Shreveport citizens lined the streets to gain a fleeting view of the firemen in action in the great radio drama. True to prediction, when the hose lines were brought into play the sight-seers did get wet by the score, but all in good fun.

Following the fire fighting demonstration, the microphone was hurriedly taken to the signal system headquarters where the vast radio audience was given a first-hand picture of action behind the scene of a modern fire fighting organization. An alarm was turned in—lights flashed—bells clanged and a radio announcer of the signal department

A Tense Moment in the Drama

Chief S. J. Flores, Shreveport Fire Department, and Jerry Bozeman, one of the south's best known radio commentators, bring a play by play account of the dramatized fire demonstration.

boomed a box number. In seconds, the message was carried to every station in the city and to the two-way radio cars of the department.

The Shreveport area citizens have a new, closer feeling for their fire department now. Thousands know more about their fire department than ever before down Shreveport way.

The Fire Prevention Committee didn't stop with just one good demonstration, as the whole week was chock full of activity. Sunday, the opening day of Fire Prevention Week, brought announcements from many pulpits and notices in church papers in response to a city wide appeal by the committee to the clergy for their assistance in saving human lives and valuable property from the ravages of fire.

A prominent downtown window was filled with fire fighters' tools, interspersed with fire prevention material, viewed by the great throngs of Shreveport business people and shoppers throughout the week.

Action was the by-word of Fire Prevention Week in the school system of the city. The big new aerial truck of the Shreveport Fire Department was sent to many of the larger schools, making several appearances each day. A demonstration of the equipment was given, and through a public address system installed in the truck, fire prevention information was given by Captain E. J. Norred, Fire Inspector of the department. All schools in the city and many in the surrounding area were given supervised fire drills by firemen and representatives of the Fire Prevention Committee of the Chamber of Commerce during the week.

Luncheon for Service Club

Another high light feature of the week was a luncheon for the Lions Club and other civic leaders at the Central Fire Station on Wednesday. This has been established as an annual affair with wide interest in the day being taken by the civic leaders of the city. The drama of the fire station did not lag at this luncheon, with an alarm coming in shortly after the meal which had been prepared and served by the local firemen. The giant alarm bell boomed, and many of the waiters jerked off aprons and jumped on roaring red trucks.

A parade of fire equipment, which has become recognized as an annual event in Shreveport, was held through the downtown area on Monday of Fire Prevention Week.

Boy Scouts cooperated with the committee in distributing thousands of pamphlets telling of the fire hazards that might be found around the home.

The radio stations of Shreveport all joined in on Fire Prevention Week. Several transcriptions were made by fire department officials and by civic leaders. These transcriptions were used throughout the week. Spot announcements were made on news broadcasts and on station breaks. Civic clubs, meeting during the week, were given pamphlets on fire prevention, and short talks on the subject.

Does all of this effort toward fire prevention in Shreveport pay? Well, the people in Shreveport think so. Annual fire losses in the city were $766,426 in 1928; $741,270 in 1929; $661,921 in 1930, when Shreveport had some 75,000 in population. In 1938 the losses were $190,373 and in 1939, $155,077, and the city now touches the 100,000 class. For the saving of $500,000, Shreveport can afford to spend time telling people about fire prevention.

So important has the subject of fire prevention come under the direction of Chief Flores, that the Fire Prevention Committee of the Shreveport Chamber of Commerce now carries on aggressive year-round activities.

Ball Player Made Honorary Chief

On the return home to Madison, Wis., of the Wisconsin University Football Team from its victorious game with Purdue University, there was a huge crowd at the station to give the team a rousing "welcome home." Johnny Tennant, who threw the last minute touchdown pass for Wisconsin and who has been a four-year resident in one of the Madison fire stations, was made Honorary Fire Chief.

PLAN TO RUSH FIRE FIGHTING AID RELATED TO COUNTY PLAN

Scheme for Protecting War Order Factories in Connecticut, and Nazi Invasion of Holland, Described

By Thomas F. Magner

CONNECTICUT firemen, given the job of protecting war-order factories scattered over the state, are faced with rival systems of coordination in case of wide-spread sabotage. Frank A. Starkel, inspector of explosives and special hazards from the Hartford office of the State Police Department, described one system at the monthly meeting of the New Haven County Fire Chiefs' Emergency Plan held at Milford on December 17.

Immediate opposition to Inspector Starkel's plan was voiced after the meeting by some of the members. The inspector outlined his plans after Captain Carl F. ter Weele, of Eindhoven, Holland, had described the ordeal of the Nazi blitzkrieg.

Tie-in With Railroad

Inspector Starkel's idea of protecting Connecticut industry in case of invasion is to tie in with the New Haven Railroad Company, using its cars to rush fire apparatus from city to city. He explained how he was working out a state fire book with detailed accounts of all types of apparatus in use. A fire chief confronted with a major fire would decide what type of extra equipment or manpower he needed, refer to the book, and call in the nearest outside company able to supply his needs.

According to present plans, he stated, in case of a bad fire in New Haven, equipment could be despatched from Bridgeport and Hartford, equipment from the smaller towns surrounding those two cities filling in, in the absence of the regular apparatus.

Chief Allen D. Judson of Stratford, an advocate of the individual system, questioned whether or not a fire in New Haven is going to wait for Bridgeport firemen to load their engines on railroad cars.

Fire started by sabotage or invasion, according to Chief Judson, are likely to be simultaneous in several places. The most efficient system, therefore, is not to call on distant cities for help without first exhausting the resources of the surrounding towns.

Experiences in Holland

Captain ter Weele, commander of light artillery during the invasion of Holland, told how Nazi snipers worked. With their faces, hands and clothes painted green, he said, groups of Germans would swing Tarzanlike through the trees, get to a point behind the Dutch lines, strap themselves to a branch, and then open sudden fire with light machine guns. Because of their green paint, the Germans were invisible in the foliage.

Germans in Holland, after the invasion, are getting plenty of "lebensraum," or living space, according to Captain ter Weele. When they appear in public restaurants, the Hollanders all get up and move away. Captain ter Weele, who left Holland with his family on August 23, 1940, is now a resident of Cheshire, Conn.

The next meeting of the New Haven Plan will be held on January 21 at Montowese.

Fire Drills for Fire Conditions

Fire shows no respect for buildings, not even school buildings. Assuming a fire breaks out, it is a duty of the teacher to aid the children out of the building to safety in an orderly fashion.

Usually when a bell rings and classes are in session, if the lesson is interesting, the ringing of the fire bell is resented; if the lesson has been moving slowly, the ringing of the bell is a welcome respite from an arduous task.

One reaction, however, is not changed. No one believes that there is a fire. It is only a drill, a drill that New Jersey requires shall be held twice a month. Because of this, teachers and pupils are to leave the room, proceed directly to a certain stairway, descend on a designated side to a specific exit and thus to the outside of the building. Practice in carrying out the above to the letter makes for a perfect drill. It is absolutely necessary that all schools be able to conduct this type of drill with a minimum of confusion. To that end, we instruct our pupils and aim for an efficient drill.

However, if a fire starts in a school, what happens to the fire drill? Although there may not be five-foot flames at the foot of any particular stairway, there may be something even worse—smoke. Smoke in an enclosed stairway can touch off that spark of excitement that bursts as a bomb shell into panic. Panic delivers the blow that causes deaths in fires.

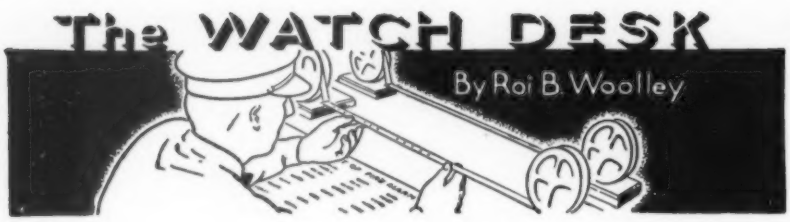
Suppose There Is a Fire?

Doesn't it stand to reason then that fire drills should be built around the idea that there might be a fire? With that idea in mind, we have experimented by closing certain stairways during a fire drill. The stairway might be closed in a number of ways. We use a full-size plywood fireman holding a sign with the words, "stairway closed." Pupils have been instructed that whenever they see our wooden fireman, they are to understand that no one is to pass by him. The regular fire drill routes must be changed to meet the emergency of an imagined fire-filled or smoke-filled stairway or hallway. A situation of this kind calls for teachers and pupils alike to be on the alert. Regular fire drill habits are exercised plus the arousing of the quality of alertness on the part of both pupils and teachers. We are attempting to keep each pupil and teacher "on his toes" as it were, so that if and when fire does come, we shall be well able to meet the emergency.

Naturally, this new play of fire drill is explained to all pupils and teachers first so they might understand better the why's and wherefore's involved. Part of a faculty meeting is devoted to a thorough discussion of the plan. The selection of emergency fire routes is

(Continued on page 38)

Children Are Prevented from Leaving by the Stairway on the Right by the Dummy Fireman Standing in the Doorway



Our inquiring reporter overhauls the firemanic news of the day

Sabotage in Washington?

Following fire, which swept through uncompleted 4-story addition to War Department in Washington, imperiling secret codes, damaging records, giving the Braves who responded to six alarms a hard workout officers of Army, FBI and other sources are said to be seeking evidences of sabotage. Reported there have been number of minor fires in the department in recent months, most of 'em in awnings. What made this "worker" tough was fact that while still fighting it another alarm was received from fire in Lewis Hotel Training School, which laid fifteen Braves low, necessitated hospitalizing nine.

Maxwell Field Blast

A civilian was killed, dozen other persons injured by explosion that wrecked the Post Exchange at Maxwell Field, Southeast Air Corps training center near Montgomery, Ala. Lieut. Col. F. E. Halloway, post commander, said explosion "possibly was caused by a small fire and accumulated gas." Nothing said about the Camp's Fire Service —if there is such!

Topeka, Kan., Reports

From Brother C. W. Sneed, No. 6 Fire Station, Topeka, we get a load of news, among which are these items:

The City is building a new fire station to replace the old No. 1 Hose structure, erected in 1900. Well, a woman who lived nearby, called the Mayor's office and complained "Just why are you building a new dog-pound next to my house!"

"Where do you live," asked the Mayor's secretary. When the woman gave the address, the secretary explained that it wasn't a "dog-pound"—no indeedy, perish the thought!—it's a brand new bungalow type fire house, to the value of $10,000.

Sunday, Oct. 5, Hose No. 6 respond to an alarm of fire, five miles beyond the city limits. The fire partially destroyed the engine on the first streamlined train in the Country—that operated West from Kansas City by the Union Pacific. Capt. Boyd of No. 6 with crew, rode back on the train while his driver brought the truck back to the R.R. Station in Topeka, after a fresh locomotive had been sent from the city.

Political Fires!

James Clark, laborer, Oakland, Cal., was rabid Roosevelt supporter. His father-in-law, Remo Maffez, was equally strong for Willkie. The arguments waxed furious and Clark confessed Maffez made him so mad that he set fire to his father-in-law's two-story flat. Fire Capt. Harry Nicholaisen broke into flaming house, rescued Clark's 3-year old son, who was burned. Other occupants escaped. Our newscout fails to state the outcome.

Vamps Unveil Old Statue

The old stone fireman which for many years was landmark atop the Firemen's Insurance Co. building, then at Broad and Market, Newark, N. J., has been placed on a concrete pedestal on municipal plaza lawn in Bloomfield, N. J. Numerous visiting fire chiefs and officials attended the unveiling, presided over by Wm. Oakes, oldest living chief of Vol. fire-fighting area in Bloomfield. Statue now stands right in front of the fire-alarm signal system building and "ferninst" the department's old bell which sounded the alarms in the past.

Official "Snoopers"

Two Battalion Chiefs of the N. Y. F. D., Brothers Freddy Wedemeyer and Dan Deasy with fireman Geo. Scott acting as Secretary to the Chiefs, left on Atlantic Clipper for London and arrived safely, to study wartime fire fighting.

Fire Commissioner John J. McElligott and Dep. Commissioner George McKenna, with relatives of the men, bid 'em Godspeed at LaGuardia airport, the 22nd of October. English gave 'em great welcome! Scott, who is 27, is first draft-age American to leave country by clipper without permission of his local draft board. It's said customs inspector Harold Adams exerted his discretionary powers in allowing the first-grade fireman to debark. A snug A. R. Shelter to you, brothers

Increased Fires Due to Fem-Smokers?

From Passaic, Scout K9 reports that there has been a sharp increase in that Jersey city since women began smoking according to Lieut. John Doremus, Passaic Fire Prevention Bureau, speaking before Junior Chamber of Com-Commerce. *"They fall asleep while smoking in bed, drop cigarettes around dress shops, and put down their cigarettes in the home or while shopping and forget them"* said Lieut. Doremus. *Ain't it the truth, Brother!*

Why Do They Do It?

We get a letter from an irate subscriber who says (in part), "Why does the government continue to release figures and names of vendors to show just who is getting war orders, and how much? Don't they know this is just inviting trouble? Take the enclosed clipping for instance; why do they want to release such information?" He then sends a clipping of a news item by United Press, Washington, dated Oct. 18, which says in part:

"Aircraft and powder factories are most urgently needed, officials said. Powder is regarded as more vital since the destruction of the Hercules Powder Co.'s plant at Kenvil, N. J., *reduced the existing powder plant capacity by one-third.* (The italics are ours.)

What joy the saboteurs will get out of knowing that their dirty work in Kenvil reduced our existing powder plant capacity *one third!* And even if this is true, what good does it do to publish the fact?

"I Knowed We'd Make 'Em Take Water!"

The Darktown Fire Brigade is slightly demoralized and the machine seems to be wrecked. This picture is used for the calendar of the Elkhart Brass Manufacturing Company, Elkhart, Ind. The picture is a reproduction of a Currier and Ives print.

Ziegler Made Chief for a Day

Former Chief William Ziegler of the Hackensack, N. J., Fire Department was reinstated on December 18, 1940 as Chief of the fire department for one day. This was the first of a series of steps taken in reorganizing the department. Since 1933, the Hackensack Fire Department was directed jointly with the police department under a Director of Public Safety, and for the past several years, each department has had an acting chief. However, in December, an ordinance was passed providing for the creation of positions of Police Chief and Fire Chief.

Chief Ziegler held office for only one day following his reappointment, and then retired on pension. Under an agreement between Ziegler and the city, which preceded the reinstatement and retirement, the city was released from paying any compensation for the period from 1933, when the office of chief of the department was abolished and Ziegler was removed from active duty, to December, 1940, when he was reinstated.

Architects Drawing of New Boston Fire Station

Auburn Hotel Fire Worst in City

The Auburn, Me., Fire Department had a most difficult time extinguishing the Whitehall Inn fire which occurred in October. Two bell alarms and a general alarm brought Auburn's Engines, One, Two, Three, Four, and Five; Hose One and Ladder One; and Lewiston's Engine One to cover Engine Six and the aerial.

About thirty of the registered and unregistered guests, who were in the hotel at the time, escaped. Another thirty of the guests ran to higher floors when they were trapped by the fire, but were rescued by firemen operating from aerial ladders. Two of the guests were believed to have perished in the blaze. Due to the collapse of three of the floors, it was not possible to excavate for the bodies, so it was necessary for the owner of the building to dynamite one of the walls in order to afford the men an opportunity to remove the bodies.

The origin of the fire has not been determined, because of the inability of the state and city Officials to carry out an investigation within the building. After seven hours, the Twin City companies finally brought the fire under control, but not until nearly two million gallons of water had been poured into the burning structure and the reservoir water level had been lowered five feet.

The Whitehall Inn Fire in Auburn, Me., Which Resulted in the Loss of Two Lives

Boston Builds New Station

The first fire station to be built in Boston, Mass., in several years will soon be completed and ready for occupancy. This new station, which will cost about $67,000 will house Engine Three and Ladder Three, two of the oldest companies in the city.

Among the unique features embodied in this station are the automatic self-closing and opening doors operated by a time switch; also three new traffic lights for the intersecting streets near the house, which will be operated automatically from the patrol desk to facilitate speed in response to alarms. Another unusual feature of the station is a novel electrical arrangement whereby house alarms will be transmitted to sleeping quarters. First the light flashes on and off for a second or two, then follows the sounding of a low siren gradually increasing in tone, and then the old fashioned bell rings. Should this experiment not work out, the old fashioned bell is already installed and equipped for operation.

W. A. Reilly,
Fire Commissioner, Boston.

Connecticut Fire Chiefs Meet

The first meeting of the Connecticut Fire Chief's Association after the annual meeting was held in the Hotel Elton, Waterbury, Conn., with President Chief John Pachl presiding.

Following the general business of the association, Chief Donnelly mentioned that in some states, the insurance companies give a certain percentage to the upkeep of the fire companies. Chief Stuart Potter mentioned that many of the larger cities are taking steps towards local defense. With the possibility of fire apparatus being called in from another town or city, it would be a good idea to standardize the four-inch hydrant thread.

Inspector Starkell of the State Police gave a short talk and mentioned that a questionaire had been sent to the various chiefs, relative to the size and thread now used on couplings and hydrants.

The banning of fireworks was also discussed. As each town or city have their own ordinances, it was decided to let them take care of their own problems.

It is possible that a 750-gallon pumper will be donated to the State Board of Education for use in Regional Training Schools for Firemen. The association went on record as being in favor of a course just for chiefs and assistant chiefs.

ALBER H. RUWET.

Chief Ross B. Davis Retires

An ordinance recently enacted by the City Council of Philadelphia, Pa., forced Ross B. Davis, Chief of the Bureau of Fire of Philadelphia, into retirement twenty years following his appointment to that position. About 200 men and

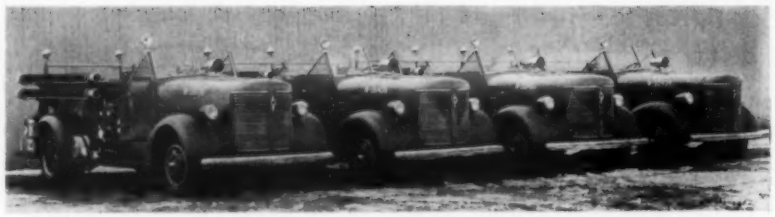
Chief Ross B. Davis

officers gathered at his twentieth anniversary celebration to pay tribute to him and to present him with floral offerings.

Chief Davis was appointed a hoseman in 1895. In 1901 he was promoted to Assistant Foreman, becoming Foreman in 1906. He was made District Engineer in 1913, this title being changed to Battalion Chief. In 1914, he was promoted to Deputy Chief Engineer, and on December 23, 1920, he was appointed Chief Engineer.

Following Chief Davis's retirement, Deputy Chief William Simmler was named as Acting Chief Engineer of the Bureau of Fire. However, Deputy Chief Simmler refused to accept the job because he could not pick his two deputies. He said that he refused to take the job unless he was given two deputies whom he felt would give complete cooperation and restore harmony in the Bureau of Fire.

After Chief Simmler's refusal to take the position of Acting Chief, Battalion Chief George Ferrier was appointed to that position. Ferrier's first assignment was as a hoseman in 1909. Seven years later, he was made a Lieutenant, and in 1918, he was promoted to Captain. He became a Battalion Chief in 1925, and from 1930 to 1936, he was acting Deputy Chief in charge of the firemen's school, head of the Fire Prevention Division, and treasurer of the Pension Fund. Since 1937, he has been chief instructor at the firemen's school.



American-LaFrance Pumpers for the Army

Above are shown four of a group of over a score of pumpers built by the American-LaFrance Foamite Corp., Elmira, N. Y., for the U. S. Army and recently delivered to cantonments throughout the country.

Schenectady Offers Yuletide Advice

In an effort to eliminate as many fires originating from Christmas trees as possible this year, some 10,000 warning tags were attached to Christmas trees to advise the home-owners of certain precautionary steps that might be taken to prevent fire by eliminating the cause. This is just another way of bringing fire prevention into the home. The cards read as follows

Banish Fire Worries for Holidays

Set up your tree securely, so it can't topple over, and away from heating or lighting fixtures.

Too much cannot be said about the great need of common sense precautions with matches and smoking materials. Not only are the usual decorations and trees a definite hazard, but the unwrapping of gift packages leaves quantities of tissue and paper that are highly inflammable. All such materials should be disposed of at once.

A good precaution at the holiday season is to keep a bucket of water and a fire extinguisher handy, as most fires can be put out with little damage, if attacked quickly and effectively. Of course, the fire department should be summoned immediately.

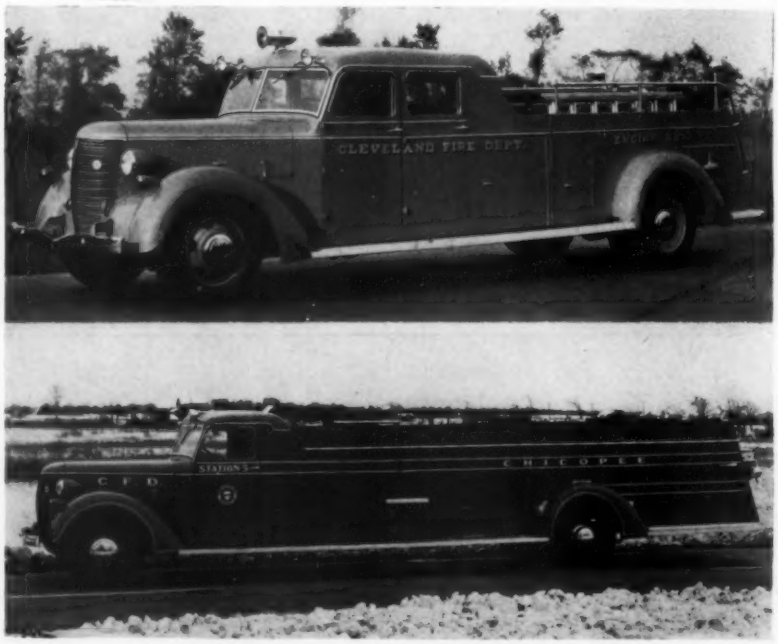
And remember—the longer evergreens are kept in the house, the greater fire-danger they become, as they dry out. It is therefore best to remove them promptly after Christmas.

J. J. HIGGINS,
Chief, Department of Fire,
Schenectady, N. Y.

False Alarms Decrease in Boston

A tabulation of the total number of false alarms in the city of Boston, Mass., over a period of eleven months, beginning January 1, 1940, has shown a decrease of seventy-five alarms over the same period of last year. Each month during 1940 has shown a decrease from the corresponding month of the previous year. Two years ago, Boston was reported to have the best false alarm record of any large city in the country. The 1940 figures indicate that, contrary to most opinions, increased fire prevention material and publicity do not result in increased false alarms.

WM. A. REILLY,
Fire Commissioner, Boston, Mass.



Buffalo Pumpers Are Ready for Service

Upper, one of four 750-gallon triple combination pumpers which were built by the Buffalo Fire Appliance Corp., Buffalo, N. Y., and recently delivered to the Cleveland, Ohio, Fire Department. These engines are equipped with seven-man, four-door, sedan type, all steel cabs which protect the entire engine crew, 750-gallon parallel series centrifugal pumps, 100-gallon booster equipment and complete miscellaneous equipment. Lower, a Buffalo built 500-gallon quadruple combination pumper recently delivered to Chicopee, Mass. This unit is equipped with an all steel, three-man cab, 500-gallon fully enclosed pumping unit, a 100-gallon booster unit, and 220 feet of ladders. All equipment is fully enclosed.

CLASSIFIED ADVERTISING

Bids Wanted, For Sale and Help Wanted $5 *per inch. Position Wanted,* $2.50 *per inch.*

FOR SALE

Reasonable. One 350 gallon Seagrave fire truck, 4 cylinder, 110 H.P. motor in good running condition, equipped with one 40 gallon booster tank. Reason for selling—capacity too small for our needs. Brackenridge Borough, Pa. J. N. Wolf, Secty.

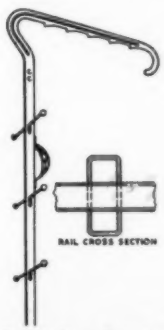
SALESMAN WANTED

Wanted to handle exclusive territory for leading fire apparatus manufacturer. Territory fully established. Address: Box No. 70, FIRE ENGINEERING, 24 West 40th St., New York.

Manufacturers' Announcement

Duralumin Scaling Ladders

A recent development is an aluminum pompier or scaling ladder designed and produced by the Duo-Safety Ladder Corporation, 811 9th Street, Oshkosh, Wis. In designing this new Series 590-A scaling ladder, the manufacturer endeavored to produce a stronger, lighter and more durable piece of equipment.



Duo-Safety Pompier Ladder

In order to obtain maximum strength, the hook part is made of forged steel. This hook is securely fastened to a duralumin hollow rectangular rail by means of a precision joint. The rungs are made of round duralumin tubes inserted through holes drilled in the flat side of the rail section. Wall brackets are also made of aluminum sheet alloy.

Advantages claimed for this construction are greater safety, greater strength, less weight, and less maintenance.

V. C. Stanley Reappointed to State Office

Announcement has been made that Governor Leverett Saltonstall of Massachusetts has appointed V. C. Stanley, President, The Gamewell Company, Newton Upper Falls, Mass., to serve a third term as State Commissioner of Firemen's Relief.

Oscillating Beam Light

A new oscillating red beam warning light, Type "06," has been designed and produced by Carpenter Manufacturing Company, 179 Sidney Street, Cambridge, Mass., for fire apparatus to warn pedestrians and cars of their approach. This light is of brass and bronze throughout, heavily chrome plated, and has a fine quality motor for oscillating. The lamp head is fixed in a manner that is said to prevent sticking in cold weather, snow, or sleet. The beam sweeps from side to side for 1,000 feet ahead.

It is pointed out that in large cities, where there is a great objection to the noise of sirens, this light might be used to advantage. Although it is too much to expect a light to entirely replace the siren, those who have used this Type "06" Master-Light report that the use of the siren has been reduced with a corresponding faster, safer, and more quiet run. The light is over six inches in diameter and comes with fender, roof, or bumper bracket for mounting.

Pirsch Apparatus for New Jersey Towns

The New Jersey Fire Equipment Company, Dunellen, N. J., sales representative of Peter Pirsch and Sons Co., recently delivered a rural type fire engine on a Diamond T. chassis to the fire department at Cedarville, N. J., a Pirsch Model 21 triple combination engine to the city of Cape May, N. J. and a Type-82, 500-gallon pumper to the Woodbine, N. J. Fire Department.

Ten Life Nets for Philadelphia, Pa.

The Superior Fire Equipment Co., 74 Park Place, New York City, recently received an order from Philadelphia, Pa., for ten of their latest type life nets, after extensive tests.

Firemen Quarantined After First Aid Work

Eight Chicago, Ill., Firemen, who fought for hours to save the life of a child stricken with diptheria, were placed in quarantine themselves. The child passed away after the futile efforts of the members of the fire department inhalator squad, under George McKimmon, Chief of the Fifteenth Battalion. The firemen were then given the news that they would get forty-eight hours off from duty and would spend the rest period in the isolation ward under quarantine at the Chicago Contagious Disease Hospital.

GORDON R. MULLINS.

Volunteer Department Successful

A number of months ago, a volunteer fire department was organized in Condon, Ore., and it has been operating with a great deal of success ever since. Of $6,432 insured valuation endangered during one year, there was only about forty-seven dollars lost. The present equipment of this department consists of a 500-gallon pumper, 1,000 feet of 2½-inch hose, 400 feet of 1½-inch hose, 250 feet of ¾-inch booster hose, and a three-section, forty-foot aluminum ladder.

New Pumpers for New Paltz, N. Y.

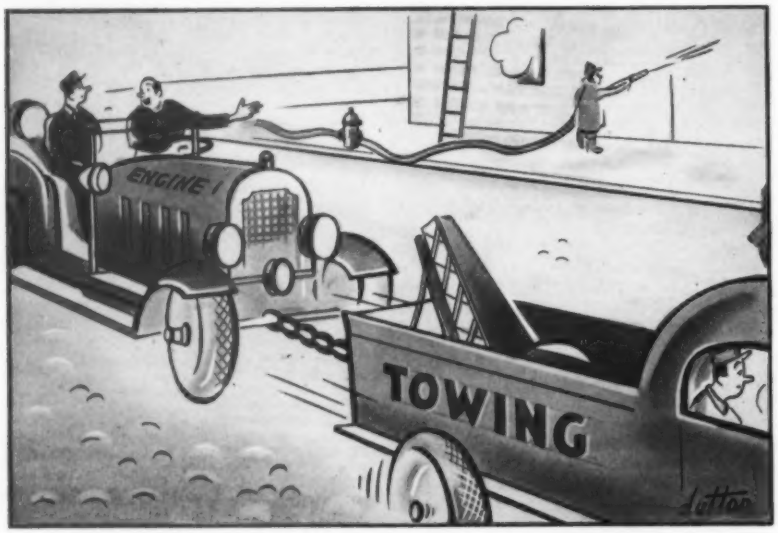
During the past year, the village of New Paltz, N. Y., purchased these two new pieces of apparatus. The apparatus on top is a Sanford 500-gallon pumper fully equipped to protect the outlying districts. The apparatus at the bottom is an American-LaFrance Quadruple Combination pumper, equipped with a 500-gallon pump and 250 feet of ladders. Chief H. S. Kaiser is standing alongside of the apparatus.

Fire Endangers Nursery Children

A fire, which evidently originated from an overheated furnace, badly damaged the interior of the St. John's Presbyterian Church in Detroit, Mich., and imperiled the lives of twenty nursery children in the old structure. One of the nursery teachers discovered the flames darting from a register and she, with the help of other teachers, led the children, aged between three to five, to safety. Firemen were hampered for a time in fighting the blaze when they were unable to break through the roof, partly covered with slate, and get water down into the interior. The fire was said to have caused about $25,000 damage.

Members and Equipment of the Condon, Ore., Volunteer Department

FALSE ALARMS



"Well, we're a little late, but they got us here all right!"

WHY WASTE THE LEAD?

Traffic Cop (producing notebook): "Name Please."

Off-duty fireman (caught speeding:) "Aloysius Sebastian Cyprian."

Traffic cop (putting book away): "Well, don't let me catch you again."

The meanest man in the world was the ventriloquist who threw his voice under the old maid's bed.

CLIPPED FROM A SOCIETY COLUMN

"Bosom buddies, friends and housemates of Smokey Joe, Deputy Chief of the Podunk Fire Department, held a luncheon wake Friday noon, November 8, for their lamented companion of happier days, soon to depart this life. Brother Joe departed Friday evening for Minnesota where he will relinquish his independence and sacrifice his liberties on the altar of connubial dissension."

He is so crooked that the wool he pulls over your eyes is half cotton.

SUCH A FOOLISH QUESTION

The bewildered department mechanic entered a ladies dress shop.

"I want a corset for my wife," he said.

"What bust?" asked the clerk.

"Nothin'. It just wore out."

It is getting so that you can hardly be the life of the party unless you can make more noise than the radio.

SIXTH SENSE

The Chief was strolling down the street holding a large dog by a leash, when he met a friend. The conversation soon turned to the merits of the dog.

"Yes," said the Chief, "that dog detects birds a mile away."

"Indeed," remarked the friend who noticed the animal sniffing nervously. "That dog acts as if a bird were under his nose, and there isn't a bird near."

The owner looked perplexed. Seeing another man near them he approached him and asked, "Pardon me, but have you a bird in your pocket?"

"No," answered the man.

After a few moments the dog's owner asked, "Excuse me, but what is your name?"

"Partridge."

"Ah!" said the Chief to his friend, "that explains it."

Don't worry if your wife turns cold toward you. The cooling may only last until the end of the honeymoon, but the billing will go on forever.

YOU'RE WELCOME

Once upon a time there was a little puppy named Fido. So one day little Fido took a walk and walked right past a fire hydrant.

"Come on over," said the hydrant.

"No thanks," said the pup.

"Aw, come on."

"No thanks."

"Aw, come on," said the hydrant, "have one on me."

"No thanks," said the puppy, "I was just over there and had one on the house."

The man who is always boasting about his family tree is generally the sap.

DARK CORNER ECHOS

"Don't kiss me like that again. I wilt!"

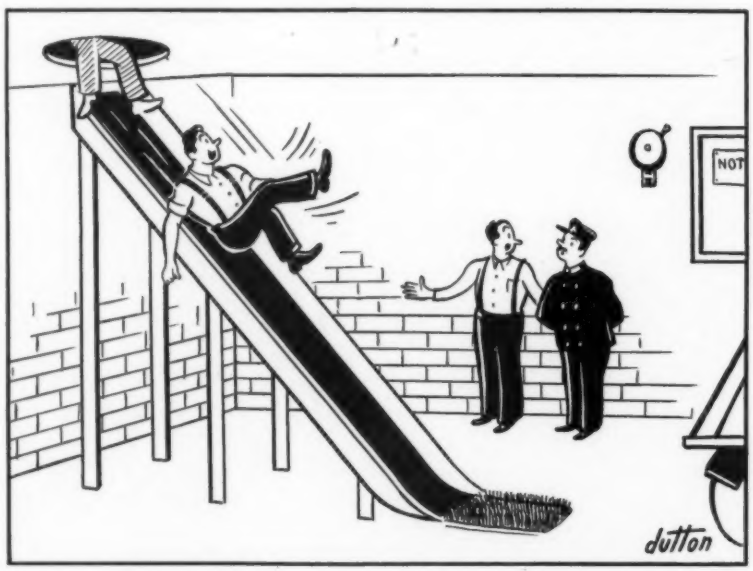
"Ah wilt thou? Success at last!"

Many a pert girl goes out to flirt and comes back an expert.

NIGHT LIFE

"My, isn't a night club a great place on a rainy night?"

"You said it! Stay outside and get wet and come in and get soaked."



"I don't know where it came from, but the boys sure are taking to it!"

. . *NOW ON THE PRESS* . .

FIRE SERVICE HYDRAULICS

By Fred Shepperd, B. Sc., M. E.

A Completely New Text Book Surpassing Everything Else of Its Kind Ever Published

CONTENTS

Chap. 1 Principles of Hydraulics

Chap. 2 Suction and Drafting of Water

Chap. 3 Velocity and Discharge
including Nozzle Reaction, discharge tables for all sizes of Fire Nozzles—small to large.

Chap. 4 Friction Loss Calculations
including calculations for all sizes of hose from ¾" to 3½" and tables of friction losses for all sizes.

Chap. 5 Calculating Engine and Nozzle Pressures
including solutions of problems consisting of single lines, siamesed lines, branched lines; a new method for solving problems involving ¾" to 2" hose; also unlined linen hose from ¾" to 3½" diam.; open butt calculations; lines laid up an elevation or down an incline; standpipe problems; water tower problems; deck gun calculations; pumpers in relay; Bresnan distributor calculations; fog nozzle calculations; quick pressure calculations; foam stream calculations; dewatering siphon calculations.

Chap. 6 Fire Hydrants and Mains
including friction loss calculations; flow calculations; discharge from fire hydrants.

Chap. 7 Fire Streams
including use of nozzles; range of streams; causes of defective streams; proper placement of pipes for good street streams; water hammer, or ram; proper use of shut-off nozzles; electrical conductivity of fire streams.

Chap. 8 Sprinkler System Calculations

Chap. 9 Fire Apparatus Pumps
including descriptions of piston, rotary and centrifugal fire apparatus pumps; calculation of discharge from pumps; pump primers; parallel-series type of pump; pump horsepower calculation; pump discharge at different pressures; ratings of pumps; pump slippage; maximum pressure limitations.

Appendix: Tables Covering the Following:
Static pressures; fire streams supplied by different sized mains; contents of cylinders, cylindrical tanks, cisterns; circumferences and areas of circles; square roots; conversion tables; ranges of fire streams; friction loss in hose; discharges from nozzles.

In presenting the new "Fire Service Hydraulics", we proudly feel that Fred Shepperd, Editor of FIRE ENGINEERING, and author of such famous and widely used books as "The Fire Chief's Handbook", "Simplified Fire Department Hydraulics" and others, has contributed to the fire protection profession what is unquestionably his crowning achievement.

This new book brings thoroughly up-to-date the subject of hydraulics as it pertains to every phase of fire fighting—in simpler, more understandable, and more complete form than ever. Not only that, it embraces, as well, many important new angles that have never before been covered anywhere. For example, there are new formulas of greater accuracy for finding friction loss and nozzle and engine pressures of small fire hose layouts; methods are shown for making quick hydraulic calculations at fires without the aid of pencil and paper; friction loss in water mains and hydrants is fully covered; calculations are given for automatic sprinkler systems, as well as for Bresnan distributor, fog nozzle and dewatering siphon problems. These are only a few of the new things.

If you now have a copy of Shepperd's "Simplified Fire Department Hydraulics" (originally issued in 1928 but now out of print), you will certainly want "Fire Service Hydraulics". *It is completely different* and nearly twice as large. Every bit of the text is new and so are all of the numerous illustrations. There are several brand new formulas, originated by Mr. Shepperd, and even old ones have been simplified or revised for greater accuracy.

All in all, "Fire Service Hydraulics" is a book every progressive fire fighter from the Chief down needs and should have. It is a "must" particularly for men studying for promotion because it gives the answers to many new questions that are bound to come up in future examinations.

$3.00

per copy postpaid

Order your copy today and get one of the first off the press. If it doesn't come up to your expectations, return the book within 5 days and we'll refund your money.

CASE-SHEPPERD-MANN PUB. CORP.
24 W. 40th St., New York

Please send me ..... copies of FIRE SERVICE HYDRAULICS at $3.00 per copy, postpaid.

Check or M.O. enclosed..... Send C.O.D.....

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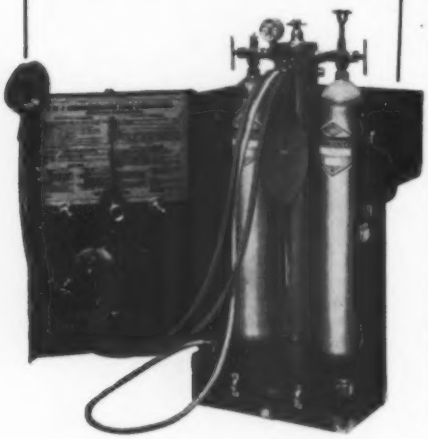
Your Community Needs An

E & J RESUSCITATOR



THE BEST RECORD FOR THE SAVING OF LIVES IS HELD BY THE RESCUE UNITS WHICH EMPLOY THIS AUTOMATIC BREATHING MACHINE

You owe it to your Service to investigate THE E & J RESUSCITATOR.

Accepted by the Council on Physical Therapy of The American Medical Association for use by Police and Fire Departments.

E & J Mfg. Co.

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581 Boyleston St. . . . . Boston
4448 W. Washington . . Chicago

PROMOTIONAL STUDY COURSE

This is the final installment of the series of questions and answers that have appeared in the journal for the past three years on various phases of fire department operation.

The following answers are to questions appearing in the December issue of this journal:

1. No.
2. They spread fire throughout structures.
3. Possibility of dust explosions.
4. Because of explosion possibilities.
5. Yes.
6. For cooling tanks and covering exposures.
7. Fire foam.
8. Small streams.
9. Wires lose their temper.
10. Yes.
11. Checking fire in basement.
12. In the basement near furnace.
13. Because of flammable construction and unprotected vertical shafts.
14. In summer, because they are filled with guests at this time.
15. Yes.
16. To facilitate rescues and to aid in fire fighting.
17. At a point to prevent fire reaching main stairwell on ground floor, and elevator shaft, if possible.
18. Yes. Prevent obstruction of stairway.
19. Because of helplessness of inmates.
20. Celluloid film, and ether.
21. Solution:
    First reduce the layout to a single line of 2½-inch hose.
    Factor for reducing two parallel lines of 2½-inch to a single line is 3.6. Factor for reducing a 3½-inch line of hose to a 2½-inch line is 5.8.
    800 ÷ 3.6 = 222 feet of 2½-inch.
    400 ÷ 5.8 = 69 feet of 2½-inch.

    Total 291 feet of 2½-inch.
    E.P. = N.P. × (1.1 + K L)
    Where E.P. is engine pressure
    N.P. is Nozzle pressure, and is 70 pounds.
    "K" is a factor depending upon hose and nozzle diameters. For 2½-inch hose and 1½-inch nozzle, "K" is .505.
    "L" is the number of 50-foot sections in the line and is 291 ÷ 50 = 5.82.
    Then E.P. = 70 × (1.1 + .505 × 5.82)
    = 70 × 1.1 + 2.9391)
    = 70 × 4.0391
    = 282.737 or 283 pounds.
22. At the top of the building.
23. Yes, because of materials stored therein and presence of electric wiring.
24. It enables close inspection of chimney.
25. Yes.
26. Clearance to exposed woodwork, condition of equipment and storage of fuel and ashes.
27. Oils, inflammable solvents, fuels, and chemicals.
28. Yes. This is important.
29. Because of continual shifting and changing of occupancy.
30. Pencil with an eraser, inspection cards, a notice book for issuing first notices, and small hand flashlight.
31. Carelessness of man.
32. A break of the bone without wound or injury of surrounding structures.
33. A break of the bone where there is a wound or opening through the flesh to the fracture.
34. Handle them with extreme care, and do not attempt to set the bone.
35. Splint.
36. Sling.
37. Send immediately for a physician.
38. Place patient on his back with shoulders and head slightly raised.
39. Lay patient on his back, and draw legs down straight and place him on a soft cushion with toes pointing upward. Treat wound and apply splint.
40. Simple reddening of the skin.
41. Formation of blisters.
42. Charring of the skin, up to complete destruction of the part.
43. No.
44. Right hand.
45. With hose rope or strap on hose just back of the coupling.
46. With hose over right shoulder.
47. By taking leg hold on rungs.
48. Empty the line.
49. Two men.
50. One-third length.
51. One-length.
52. Relieve line of water by breaking at street or draining by opening valve at engine.
53. Because of inflammable volatiles used.
54. To confine and remove inflammable vapors.
55. Yes.
56. Foam and carbon dioxide gas extinguishers.
57. Presence of inflammable solvents.
58. Gasoline and benzol (of the volatile inflammable group).
59. Yes.
60. Near the floor, for these gases are heavier than air.
61. Static electricity.
62. Automatic sprinklers and steam jets.
63. See that fire is completely extinguished.
64. He must send to the department surgeon each day a list of all members who are absent on account of sickness or injury.
65. When his superior officer is not at hand.
66. When he is the ranking officer present.
67. He shall see that good order and discipline are maintained and shall take suitable action in the case of breach of discipline.
68. He shall see that they are relieved and sent back to quarters immediately upon learning that their services are no longer needed.
69. Report it within twenty-four hours to headquarters.
70. Investigate and report in writing in full all particulars to headquarters.
71. He shall examine, correct, and re-

vise such requisitions as necessary before forwarding same.

72. By sending, or directing a subordinate to send, special call or additional alarm from street fire alarm boxes.

Radio Proves Indispensable

(*Continued from page* 16)

case of a fire, an emergency call, or any other important call. I believe that the radio is an asset to all Fire Departments where there is a permanent department.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at headquarters twenty-four hours a day. We use an American-Bosch set, and it has proven very satisfactory.

Tulsa, Okla.
C. C. Jennings, Chief

Our department has both one way and two-way sets. We have found the radios beneficial in being able to communicate quickly to all radio equipped cars. We believe that the radio is an indispensable asset to efficient fire fighting.

Our radio is operated in connection with the police radio. There is a qualified operator on hand at Police Headquarters twenty-four hours a day. We use factory built Philco radios.

Company Distribution Map

(*Continued from page* 24)

cam that controls 13's disc. However, if Engine 13 is at the fire, the corresponding cam is thrown into the "off" position, thereby extinguishing the disc on the map. On the other hand, should Engine 13 be moved to Engine 56's quarters, the 13 disc is extinguished but disc 56 is lighted (although Engine 56 is at the fire) on the basis that Engine 13 is filling in at 56's quarters. The cap numbered 13 is then placed on the cam numbered 56 which indicates to the operator that 13 is working out of 56's quarters.

The caps on the cams are in colors like those used on the discs so that engine and trucks will not be confused.

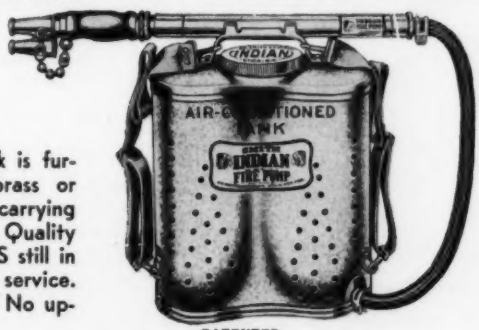
John T. Gegan, Chief Fire Alarm Operator (shown in the picture with the map) said that the new map replaces the now obsolete map installed in August, 1911. Elimination of companies when the fire department was motorized, and shifting of company quarters for strategic reasons caused the obsolescence, according to Mr. Gegan.

ROBERT GREENOCK.

Helena Orders Two Trucks

Forseeing the eventual need for fire trucks by the many cities, towns and villages in the country, the city of Helena, Mont., recently awarded contracts for two trucks so as to avoid the jam of orders which will probably result in the future. A contract was signed with the American-LaFrance and Foamite Coproration for a twelve-cylinder, 750-gallon pumper. Another contract was awarded to Burgan and Walker, Inc., representatives for the General Fire Truck Corporation, for a fire truck mounted on a 1½-ton chassis with a 150-gallon booster pump.

INDIAN
FIRE PUMPS
ARE THE PERFECT SOLUTION TO THE PROBLEM OF SMALL FIRES



PATENTED

5 gal. rust proof tank is furnished, galvanized, brass or chrome plated. Truck carrying racks. Powerful pump. Quality made. Many INDIANS still in use after 10 years' service. Low in original price. No upkeep expense.

START THE NEW YEAR

with an ample supply of INDIANS—the fastest, easiest way of putting out Class A fires. Water damage minimized. No chemicals—only clear water used. Can be made non-freezing. A different use every day. Catalog gives full details. *Send for a copy and testimonials from fire department users.*

D. B. SMITH & CO., 406 Main St., UTICA, N.Y.

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HERCULES EQUIPMENT & RUBBER CO.
530 Third St.,
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INTERSTATE TRACTOR & EQUIP. CO.
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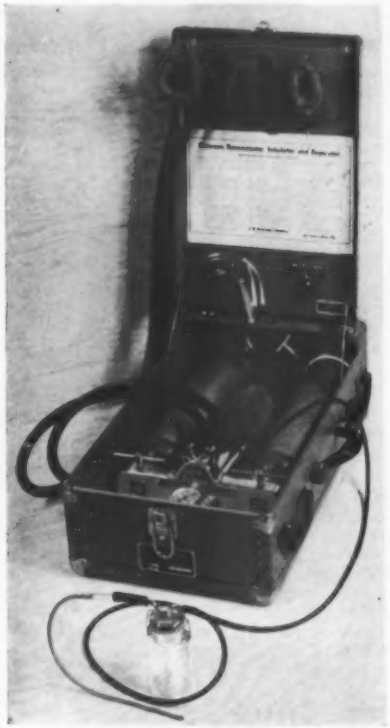
For 1941

The

EMERSON RESUSCITATOR, INHALATOR & ASPIRATOR



It is completely automatic and self-adjusting.

It is small and compact, weighing only 60 pounds, complete with tanks.

It operates on a new mechanical principle, employing no pistons, no leathers and no oil.

And each unit carries a two-year factory guarantee.

Be sure to include this life saving equipment in your current budget!

J. H. EMERSON CO.
22 Cottage Park Avenue
Cambridge, Mass.

Among the Fire Fans

(*Continued from page 22*)

10-24 Followed by the box number—all recalled men report to scene of fire.

10-25 Release recall—emergency over.

10-26 Divide engine companies into two units.

10-27 Normal operation of engine companies to be resumed.

Others heard from recently are "Jimmie" Jackson of Oswego, N. Y. . . . George B. Hill, 6621 Steadman Ave., Dearborn, Mich., and Ed. Woodridge, 30 Walnut St., Medford, Mass. Mr. Woodridge offers to impart information on how to convert tone alarms of a radio to a tapper. Boston and New York transmit signals by radio, the box numbers taking the form of tone signals.

John H. Brickell, Glenwood Ave., Menlo Park, Cal., gives an interesting version of the Maltese Cross. Mr. Brickell admits he hasn't checked it yet, so merely passes it along for what it is worth. His information takes the form that fire brigades of ancient cities adopted the emblem because they received help from the Crusaders who were going to and from the Holy Land.

Lieut. John Lambert, Engine 49, Southampton Rd, and Roosevelt Blvd., Philadelphia, has a large collection of fire badges at his station. Lieut. Lambert has collected 225 badges from departments in Pennsylvania since 1912. He also has one of the first badges of the Philadelphia Fire Department when it was adopted as a paid organization in 1873.

Thanks to J. Emory Parks, Rescue Fire Co., Cambridge, Md., for the Philadelphia item. Also thanks to Mr. Parks for his information on the Martin Steamer in Fire Facts. . . . Among the many holiday greeting cards received, this writer took a special liking to the ones designed to please the eyes of buffs. These cards were the ones from Gordon Mullins; "Bill" Sprangers of Philadelphia Engine Co. No. 28; and W. A. McDonnell, St. Louis. Why can't we think of those swell designs for cards?

Sources not heard from lately include Vincent Bolger (has the army got you?); Engine 11, Utica, N. Y.; Box 14, Jackson, Mich.; and Box 35, Minneapolis. How about some news, fellows?

Note to Baltimore, Md., buffs. This writer, having moved to the city limits, now has a difficult time in keeping up his attendance at multiples. He has a tentative agreement with Leslie Keller (Gilmor 8205-J), and Bob Grumbine (Gilmor 1829-J), to receive all calls. The trio would like to include other buffs in the plan. The phone number of this writer is Tuxedo 4476. Baltimore buffs kindly take note.

From Ben Ellis, we learn that horse drawn Pungs have been placed in various fire stations in Boston in preparation for the severe winter that has been predicted. These Pungs were converted from Hose Wagons. For the benefit of readers in milder climates, it may be well to explain that Pungs are especially designed to be drawn over snow and ice, having runners for wheels.

Fire Drills for Fire Conditions

(*Continued from page 29*)

stressed at this time. The plan is then used as the basis for an assembly program. Secondly, a modified version of the assembly program is presented in all classrooms by a group of older pupils Convinced now that all pupils and teachers have a better understanding of our new type of fire drill, we are now ready to put our plan into operation.

Once having mastered this new phase of fire drill, we plan to carry this one step further by the installation of a code system of bells. In this, the ringing of certain signals on the fire bells will indicate the location of the theoretical fire, and all teachers and pupils will be governed accordingly.

It should be kept in mind that a fire drill is a drill for a real fire and not just a routine method of getting pupils out of the building. Our main purpose with any fire drill is to challenge youngsters to think in an emergency.

T. S. Davis, Principal,
Lincoln School, Englewood, N. J.

Sound Beach Holds Inspection

The annual inspection and banquet of the Sound Beach Fire Department, Inc., of Old Greenwich, Conn., was held at the department headquarters and at Rich's Inn on November 15.

Chief J. J. Sanger has started a new recruit school to replace firemen who may be called by the draft. The new members are from seventeen to twenty-one years of age and are given the same schooling that the regulars have. They will go into active service when replacements are needed.

Dr. A. E. Austin, the Department Surgeon from 1907 to 1937, and now a Representative in Congress, was presented with a gift in commemoration of his thirty years service.

The review was held by Chief S. M. Potter of the Greenwich Fire Department. Dr. E. G. Stillman, Honorary Deputy Chief of the New York Fire Department and a member of the Fire Department Honor Emergency Fund was on hand. He entertained the gathering with a showing of part of his collection of fire pictures, of which he has the finest in the world.

Fire Marshal Paul Hienz, and his assistant Captain Edward Curren of the Fire Prevention Bureau of the New Haven Fire Department, gave a demonstration and talk on his special work in that field. Others to attend were the Board of Selectmen, Wilbur M. Peck, Otto Klump, and T. J. English, Chief of Police P. Flanagan of Greenwich, and Leon Meany, Chairman of the Ways and Means Committee of the Fairfield County Fire Chiefs Emergency Plan.

Correction

On page 616, December, 1940, issue the item should read "Rescue Fire Co. of Cambridge, Maryland."

The Round Table

(*Continued from page* 19)

our responsibility by making generous contributions. We are not suggesting any sum to any property owner, but assure you that any contribution you may like or feel able to make will be greatly appreciated, regardless of size.

"I might add that our company is purely voluntary, not a person in it receiving one cent of remuneration."

Cooperatively yours,
THE PRINCESS ANNE VOLUNTEER FIRE CO.

* * *

The following replies were received in answer to a previous question on telephone alarms:

V. W. Griffith, Chief, Birmingham, Mich.: We have the operator type of telephone system in our town, but I know of a small town near us which has no paid department and the dial system. It was necessary for them to put on two additional city operators who serve as both police and fire signal men. They take police calls and also sound the alarm for the volunteer fire department. This seems to have solved their problem.

John C. Long, Chief, Danville, Va.: We have not had a case of delayed alarm as far as our fire alarm system is concerned. Some times the person calling the fire department by telephone has some trouble getting the operator, but we have never had a serious fire on that account.

Newton Lavery, Chief, Burlington, Vt.: At about 3:05 p.m., on May 6, 1929, the fireman on watch at the Central Fire Station, on answering the telephone at least three times and receiving no response, assumed that someone had the wrong number and hung up. At about 3:20 p.m., the telephone rang and an excited voice asked if we were ever coming to the fire on Oak Street. On arriving we found three buildings afire, one tenement, one barn and shed, and one store and tenement. The information we got after the fire was that the fire had apparently started in the shed on the second floor of the tenement. The woman living there went to the phone and called the fire department. After she had given the number to the telephone operator she looked toward the shed and saw the fire coming toward a new radio near the doorway. Not waiting until she had got the fire department call through, she dropped the receiver and tried to save the radio. Finding this impossible, she ran down the stairs and screamed "fire." A man nearby hearing her screams, ran and pulled in an alarm from box 311 two blocks away. Whether he did or not, no alarm was received from this box. The first word we got of the fire was about 3:22, or about seventeen minutes later.

Had she taken about thirty seconds at the telephone, no doubt the fire would have been confined and extinguished in the shed where it was first discovered. The delay caused very much damage to all three buildings.

Fred P. Higgins, Chief, Grand Rapids, Mich.: We have had delayed alarms. A loss can go from two figures to three, and from three to four figures,

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REPUBLIC HOSE
FOR FIRE DEFENSE
Sturdy, long-lived Republic Fire Hose does heroic duty in the battle against flames. Built with an advanced construction that combines great strength with ease of handling, it consistently provides the most effective, dependable service under every type of abuse. The physical properties of its carefully selected and tested materials are permanently protected against mildew and rot by the Provar Process—an exclusive Republic formula.
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IT'S LIGHTER AND BRIGHTER

Homelite Portable Floodlighting

A Homelite Portable Generator weighs only 82 pounds complete with built-in gasoline engine—the easiest unit to manœuver on a fire you can find. Yet you can get 1,800 watts from this compact little powerhouse—enough current to operate several floodlights—enough floodlight to illuminate brightly a large area of the grounds.

Follow the leaders. Specify Homelite Portable Floodlighting for your department. Take advantage of this low-cost method of giving your men the brilliant floodlighting they need for safety and fast, efficient work.

Get Our Fire Dept. Bulletin

Shows how thousands of Fire Departments use Homelite Portable Floodlighting with exceptional results. Illustrates many ways for using it. Tells what users actually think of such equipment. Gives complete information on all units available. Write for free copy.

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CORPORATION
801 Riverdale Avenue, Port Chester, N. Y.

and so on right up the scale just because of delay.

The delay is usually caused by lack of a plan of procedure in the event of fire, lack of knowledge relative to the true value of extinguishers, and their limits, lack of understanding as to calling the fire department, and lack of emergency training.

We had one we believe was delayed approximately eighteen minutes. This was in a sprinklered building. The loss was approximately $500,000.

We had several injuries, lost some hose and two small ladders. It was necessary to lay 16,500 feet of hose and to bring water in one-quarter of a mile from either direction.

We have frequently had delayed alarms in smaller risks and each one costs the fire department extra money.

M. M. Lingeman, Chief, Grand Island, Neb.: We had a fire outside the city limits in an old airport which had been turned into a road house. The alarm was turned in at 3 a.m., by the yard master of the railroad which is located one mile away. He notified us that it was a grass fire and that it was located some distance away from the actual scene of the fire. With the resulting delay of five minutes, the fire losses amounted to $10,000, and one man, who was intoxicated, lost his life. Arson was suspected but not proven.

The following replies are in answer to a previous question on the method of fighting brush fires:

James Sweeney, Chief, Clifton, N. J.: We use the General Electric Tungar charger and find it very satisfactory.

The battery is charged in position with the plug connection from the battery to the charger on the steering post. The connection is removable and is controlled by balance weight lifting to the ceiling when the apparatus answers alarms.

Thomas A. Qualey, Chief, Medford, Mass.: In stations with one company, a trickle charger is used. In stations where there is more than one company, a group charger is in use.

We use the Tungar type charger with good results. Batteries are not removed from the apparatus while being charged.

Zephrin F. Drouin, Chief, Lewiston, Me.: We have our own motor generator for Central Station and use a trickle charger for sub-stations. We use the Tungar type with satisfactory results.

John Fisher, Chief, Duluth, Minn.: We use a Westinghouse single charger. Batteries are not removed from apparatus for charging. We have outlets at the location of each piece of apparatus so we can plug in when necessary.

Brooks McClure, Chief, Huntington, West Va.: We have two types of chargers. In the sub-stations we use the Tungar bulb type. At Central Station, we use a dynamo type with an outlet for each piece of equipment. Batteries are charged in position.

H. C. Crumb, Chief, Bay City, Mich.: We use portable chargers of six-volt capacity in each fire station.

We leave batteries in truck and charge from extension cords, using snap connections. We have a card

MIDWESTERN FIREMAN'S COAT
With Detachable Lining

This coat, our No. 331, furnished in different materials, has as a special feature a detachable lining, of pure wool. This feature makes it adaptable to all conditions of weather and assures you of the warm, dry protection that only MIDWESTERN can offer, for only $13.60.

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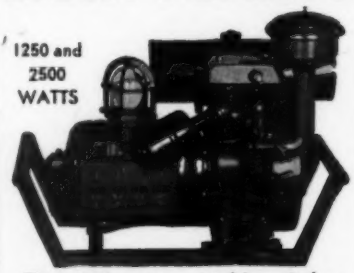
MIDWESTERN MFG. CO.
MACKINAW, ILLINOIS

"U.S." PORTABLE LIGHT PLANTS

1250 and 2500 WATTS



This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅝" bore x 2⅝" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size.

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Write for Catalog.

UNITED STATES MOTORS CORP.
430 Nebraska Street, Oshkosh, Wis.

on the steering wheel, so that the driver will not forget and pull out before he disconnects the battery from the charger. We do not have any trouble as batteries are watched very closely.

W. G. Lutkey, Chief, Oakland, Cal.: We have generators in the company houses. Batteries are only removed from apparatus when they are run down. They are then sent to the shop.

Owen A. Owens, Chief, Ogden, Utah: We charge our batteries in position with a portable rectifier.

Walter F. Israel, Chief, Detroit, Mich. Our batteries are charged in position with the Tungar and General Electric chargers.

Thomas R. Hartnett, Chief, Racine, Wis.: Batteries are charged in position on our trucks. We use trickle chargers on small batteries only.

David E. Hatt, Chief, Lorain, Ohio: We use a wall charger with extension cord connection. We have used the Perfex 110 V, eight amperes, sixty-cycle trickle charger with satisfactory results.

Chris Smith, Chief, Muskegon, Mich.: We charge our batteries in position with the General Electric Tungar charger.

H. T. Gleason, Captain, Miami, Fla.: We use the Mallory type and the Westinghouse Rectigon charger. Batteries are charged in position with slip plug connections.

Thomas F. Gussner, Chief, Bloomfield, N. J.: The method we use in keeping our apparatus batteries fully charged depends on the use during the week.

Each Saturday they are checked and fully charged if needed.

We use a Forest rectifier and find it very satisfactory. We do not remove batteries from the apparatus as the rectifier is mounted on the wall of each station with a direct line which enables us to charge all or one apparatus at a time.

S. D. O'Connor, Chief, Beaumont, Tex.: We use a motor generator and rectifiers capable of charging from five to twenty amperes, which are used according to the condition of the battery to be charged. We do not use trickle chargers.

Batteries are not removed from cars. We use a pin plug of the polarized type and so arranged that it can be automatically disconnected when the apparatus leaves its berth.

The following reply is in answer to a previous question on day and night response of fire apparatus and men:

G. R. McAlpine, Chief, Oklahoma City, Okla.: This department has given a great deal of study to the question of day and night response and have arranged some districts and set up a night response and a day response on the running card. This particular night response was considered from the standpoint of congested outlying districts in the oil zone where oil wells and oil storage were present. Such fires presented a greater hazard at night.

As to box alarms in the residential or outlying districts, we have not arranged any special response for the reason that the response in these districts call for a first alarm response of two engines, one truck and one

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It's 5 TOOLS in ONE!

1 INSIDE DOOR OPENER 3 PLASTER HOOK
2 OUTSIDE DOOR OPENER 4 TIN ROOF CUTTER
5 WINDOW OPENER

Yet the HUXBAR costs no more than a Single Tool—

Finding no appliance suitable for every fire fighting and general rescue work need, Captain Walter C. Huxel, a veteran of the Cincinnati, Ohio, Fire Department, invented, developed and patented the Huxbar for fire fighting and rescue work. Now fire chiefs in large cities, and heads of volunteer fire organizations everywhere, are ordering it the instant they see it demonstrated. All are astounded at the simple, practical efficiency of the Huxbar.

The Huxbar is about 36" in length, weighs only 8½ lbs., but has a tensile strength of 175,000 lbs. per square inch.

Mounted on the side of the pumper, hook and ladder, and salvage truck with special chromium plated mounting brackets, the Huxbar equips the department for varied access and rescue jobs at very moderate cost.

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Sold through Fire Fighting Equipment and *Municipal Supply Houses Everywhere*

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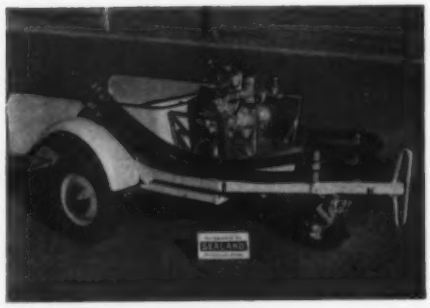
Patent Applied For

Centrifugal Booster Fire Pump

Power take-off operated. Capacities 150 gallons to 300 gallons. Pressures 120 lbs. to 400 lbs. Manufactured in either single stage or two-stages, easily adaptable to existing apparatus.

Mobile trailer unit, 150 gallon Portable Pumping Unit at 100 lbs. pressure, 22 horsepower, 4-cylinder motor. Carries from 500 to 750 feet of 1½" fire hose. Equipped with 100 gallon Booster Tank. Has provision for attaching to any car. Will be glad to supply additional information on either of the above units. Write today for latest literature.



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Control loss from water damage by the use of

SHUREDRY SALVAGE COVERS.

Thorough drill in their use as covers and catchalls will improve your department's record. Light and easy to handle, they do not freeze even at very low temperatures and will not crack when folded for storage.

Write for information and prices.

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NOW, SPEED TO FIRES IN SAFETY WITH AN 06 MASTER-LIGHT!

Chief, let a FREE TEST show you that an 06 MASTER-LIGHT means *faster, safer, quieter,* runs! Powerful sweeping red beam warns traffic 1000 feet ahead — clears way in any weather. Fixed lamp head cannot stick in snow or sleet. Effective even in daylight!

Write now for new free Fire Chief Folder illustrating MASTER-LIGHTS. We allow 30-Day FREE TRIAL — no obligation! Send for free Folder NOW!

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200 Sidney St., Cambridge, Mass.

squad or rescue company. To make a different night response to that of the day would mean that we would have to add a third engine to the first alarm response, which would increase the cost of the department. Of course, we have special classifications in all districts that call for additional engine and truck response.

These classifications are as follows: schools, churches, theatres, lumber yards, furniture, warehouses, or furniture manufactures and orphanages.

I believe the day and night assignments should be equal for the reason that a city of the size of Oklahoma City usually has a two-engine response covering the residential and outlying districts. You cannot cut this response below a two-engine response and you cannot increase the night response without the efficiency of the other districts adjacent to the district of the fire, being affected. This extra response will increase the maintenance cost of the department in addition to increasing the traffic hazard in connection with the movement of apparatus to and from the fire.

The night and day response is the same in Oklahoma City except for special classifications.

O. B. Kinsman, Chief, Watertown, S. D.: We have never had any difficulty in starting any of our fire engines in cold weather.

In our city, most of the buildings are heated with steam, and we have steam heat in our truck room as well as the other quarters of the fire department.

The temperature of the truck room never goes below sixty degrees, even in the coldest weather. The heating system is owned and operated by the municipality, and for that reason the cost of heating the truck room is only minor.

The following replies are in answer to a previous question on starting fire apparatus motors during cold weather:

Napoleon Ayotte, Chief, Hibbing, Minn.: We do not have any difficulty in starting our engines in cold weather. Once in every twenty-four hours, engines are started and run at least ten minutes so as to be sure of proper lubrication.

We have warm quarters, use a good high grade of gasoline, and see that batteries are kept fully charged at all times.

However, we do not believe in changing gasoline at every purchase. We have got better results from using the same high grade at all times. This is also true with oil.

Spark plugs are checked once a week by the mechanic, and carburetors drained once a week.

C. E. Foster, Chief, Astoria, Ore.: We have no difficulty here as we do not have very cold weather.

Some years back we did use electric spot heaters placed in front of the radiators. Two of our stations are now heated with steam heat, and in the third station it has not been cold enough to bother.

Thomas Finnegan, Chief, Helena, Mont.: Our station is kept warm at all times and we prime our motors twice daily. We cover the entire hood with a blanket, and cover half of the radiator if the weather is severe. We let the motor idle at the fire.

David G. Stuart, Chief, Ventnor City, N. J.: We have never experienced any trouble in starting our apparatus as the buildings are heated. We believe the best way to take care of this trouble, when it is impractical to heat the building, is to place a drop cord with a lighted, protected, bulb under the hood on the intake side of the motor. This will maintain sufficient temperature to insure easy starting.

R. J. Van Fleet, Chief, Hasting, Nebr.: We have never had any difficulty in starting engines in cold weather as the station is always heated. We do not have any special means of heating the engines.

When engines are out of the station in cold weather, they are never allow to get cold as they are either run constantly or often enough to keep the motor warm.

Buell Cotton, Chief, Huron, S. D.: Our apparatus is kept in a heated building. We don't make a practice of starting the engines in the house. This practice doesn't assure you that the motor will start when a call comes in and I believe it is hard on the motor. We do not have a drill tower and run all our practice and drills at the State Fair grounds. By doing this, the motor has a chance to warm up and to eliminate the condensation that is so harmful to a cold motor.

Roy Elliott, Chief, Medford, Ore.: I have installed on each apparatus, one of the Durkee Atwood motor heaters. This is installed in the upper hose connection with a copper tubing running to the rear of the truck and a plug in connection on the rear tail board. A wire and a plug which supply the electrical current to the heater are installed in the floor. All we do then is to drive away, the plug pulling itself free. These heaters have three degrees, low, medium and high. The large trucks are run on medium; the smaller one on low, which is plenty for the weather condition here in Southern Oregon.

J. E. Hutchins, Chief, Macomb, Ill.: We have had no difficulty in starting engines in cold weather. Our method is to never start an engine after washing until it is thoroughly dried off, thus eliminating moisture that would cause trouble in starting after the motor is cool. Our apparatus room is kept at seventy degrees.

This method has always been satisfactory. Our trucks are also equipped with a heat unit in the radiator hose that takes the power from the electric light line, but we do not use this as we had a little trouble with condensation in the oil system.

J. E. Travis, Chief, Salina, Kans.: We have no trouble in starting our engines in cold weather. Our apparatus room is kept warm all the time. When on a fire call we always let our engines run even though the apparatus is not being used at the fire.

This method has proven very satisfactory.

Roy Stallsmith, Chief, Logan, O.: We have a heated room for our apparatus. Every fall we go over the outfits carefully, checking spark plugs,

Barton Front Mounted

AMERICAN-MARSH PUMPS

Barton - American Midship

FIRE APPARATUS CENTRIFUGAL PUMPS

Duplex Multistage

Offered in Single and Duplex Multistage Models 200, 500, 600 and 750 G.P.M. Capacities.

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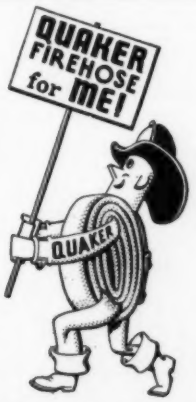

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Quaker Fire Hose is the leader for many, many Chiefs who demand Quality Hose for the protection of the lives of the people and their property in the section for which they are responsible.

Quaker Fire Hose is flexible. It is easy to handle. Coils readily and is fully guaranteed. When action at a fire gets at fever heat, that is when you can count on the dependability of Quaker Fire Hose.

Have real fire protection—insist on Quaker.

Multiple Jacket Hose made in four distinct and different constructions.

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Every tool you need for emergency, rescue and salvage work built into one rugged, high-speed unit.

- **COMPLETE**—contains everything you need . . . over 275 "emergency" essentials.
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Specify This
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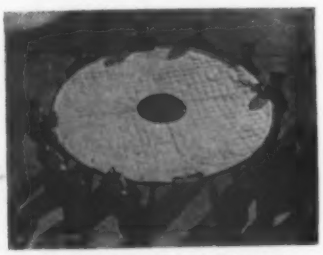

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Lives must be saved! And at those times when persons are trapped in smoke and flames, high above the ground, ATLAS LIFE NETS are the *life saving machines* to put in action.

ATLAS LIFE NETS have proven in Official Tests and on the action front that they are the *best*—and certainly for life saving only the best should be used.

Then be prepared for life saving emergencies—specify ATLAS LIFE NETS on your new apparatus—on both Aerials and Pumpers!

Send for new bulletin!

ATLAS FIRE EQUIPMENT CO., INC.
26 WARREN STREET - NEW YORK, N. Y.

ignition, cleaning generators, rigidly testing our batteries and cleaning all gas lines and filters. Any apparatus can be made to start if it is kept in good condition.

A good mechanic can insure good starting by going over all apparatus and it is money well spent. We test our batteries every week and usually recharge every two weeks. We also start up and run once every week regardless of weather. If it is done more often, it seems to cause sweating in the motor and water collecting in the oil pan.

Charles Stewart, Chief, Ford City, Pa.: We do not have any difficulty in starting our engines in cold weather, as our engine houses are heated with steam and kept at a temperature of seventy degrees during cold weather.

I know of a number of apparatus rooms, as well as private garages, that are not kept warm, and they have very little trouble starting engines in cold weather. One method used is to place an electric heater directly underneath the engine or a small electric heater underneath the hood.

If a good grade of light oil is kept in the engine crank case, and the spark plugs and distributor points are kept in good condition, with a good grade of gasoline used, there should not be any difficulty in starting engines in cold weather.

H. C. Groebner, Chief, New Ulm, Minn.: We have no trouble starting our engines in cold weather as our apparatus rooms are kept warm at all times.

We never start them except for fire calls or when they run fifteen minutes or longer as it prevents slush in the crank case.

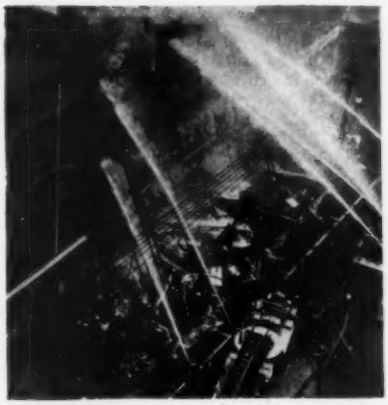
Chiefs Talmar Wise, Circleville, O.; John R. Peek, Sturgis, Mich.; Frank Clark, Belvidere, Ill.; Frank W. Fuller, Brainerd, Minn.; Frank Pulaski, Boise, Ida.; Bert Ashner, Lehighton, Pa.; J. H. MacWhirter, Eveleth, Minn.; Henry C. Hansen, Rhinelander, Wis.; Andrew T. Callahan, Harrison, N. J.; G. M. Houren, Winnetka, Ill.; Kenneth Hammel, Owatonna, Minn.; Frank Cantara, Biddeford, Me.; William F. O'Neill, Weehawken, N. J.; and Richard F. Salamone, Needham, Mass., report that they have no difficulty in starting engines in cold weather because the apparatus room is heated.

The following replies are in answer to a previous question on regulations for the installation of air conditioning systems:

George E. Jacobs, Chief, Canton, Ohio: Regulations governing the installation of air conditioning systems have been compiled, but have not been adopted.

Alex W. Dotson, Chief, Elkhart, Ind.: The Building Commissioner issues permits for the installation of air conditioning systems. These permits are regulated by the State Fire Marshal. We expect to have an ordinance passed in the near future.

Thomas H. Cotter, Chief, Providence, R. I.: In connection with the installation of air conditioning systems, while there is no specific ordinance governing installation, the Inspector of Buildings of this city imposes certain requirements and standards to be followed. These requirements have been



WHERE
PRESSURE
COUNTS

Flames roaring from the upper floors and the battle is on. PRESSURE is the one vital factor that you depend on in fighting such fires. If the mains in your city are clogged with incrustation you are *not* getting full pressure. RECOMMEND A NATIONAL CHECK-UP of the water distribution system in your city —everybody will benefit.

NATIONAL WATER MAIN
CLEANING COMPANY
30 Church Street, New York, N. Y.

COVER'S
NOD and SHAKE
SMOKE MASK

Carry It in Pocket. Slip on in a Jiffy. Positive Protection to Eyes Against Smoke and Saves the Lungs.

WHY GET SICK?

Price $48 per Dozen

Upon receipt of $4.00 one will be forwarded as a sample postpaid.

H. S. COVER
Station A, South Bend, Ind.

adopted from recommendations made by the National Fire Protection Association.

Ira T. Jones, Chief, Bellingham, Wash.: The installation of air conditioning systems is covered by the Pacific Coast Uniform Building Code.

C. A. Hart, Chief, San Antonio, Tex.: Our city ordinance covers the installation of air conditioning systems. It provides for the following: Application, plans and permits; construction and installation of ducts; automatic fire doors and dampers; air inlets and outlets; filters; fire extinguishing equipment, etc.

W. P. Weeks, Chief, Battle Creek, Mich.: All theatres, department stores, and majority of office buildings in Battle Creek have air conditioning, and we have experienced no trouble from the above.

James T. Sweeney, Chief, Superior, Wis.: Installation of air conditioning systems is governed by the Wisconsin State Building Code, and subject to approval of the Industrial Commission at Madison.

M. J. Fleming, Chief, Albany, N. Y.: All permits for air conditioning are issued through the Building Department in the City of Albany, and must meet the requirements of the National Board of Fire Underwriters.

Thomas R. Hartnett, Chief, Racine, Wis.: The installation of air conditioning systems is governed by the building code. The requirements provide for fire proof construction with automatic shut off.

Correspondence

Volunteers for British Fire Service

To the Editor:

The enormous strain that is being placed on the fire fighters in England, by constant air raids, and which will inevitably become more sustained during the coming winter months, has resulted in the formulation of the enclosed method of helping these brave defendants of the besieged islands in a practical manner. The plan is as follows:

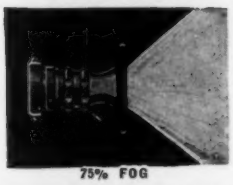
Each municipality that maintains a paid fire department be requested to allocate one fireman from their present staff, who, having volunteered for such service in England, will be assigned to such duty until cessation of hostilities, or until such service is unnecessary in the opinion of the British authorities.

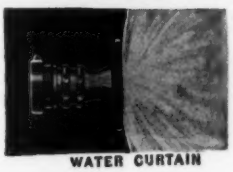
The municipality is requested to pay the man his present salary and provide his uniform and his passage to the point of embarkation, later to be agreed upon. Each fireman who has been accepted for such service shall receive guarantee of the retention of his seniority rights, and reinstatement to service on his return from overseas. Should he be killed or incapacitated, the municipality shall provide adequate provision for his dependents, if any.

Each volunteer shall make his own financial arrangements with his controlling body for the allocation of his remuneration. This obviates the necessity of bookkeeping. Each man who volunteers will have to promise to uphold the standard of Canadian and American fire fighters and obey those who have been placed in authority over him. Any

The FIRST and still the BEST
ELKHART'S
MYSTERY
NOZZLE

SOLID STREAM


75% FOG


WATER CURTAIN

A UNIVERSAL NOZZLE — NOT MERELY A FOG NOZZLE

The Mystery was the first real combination fog, water curtain and straight stream nozzle, made available to fire fighters.

Now, after three years' widespread acceptance by fire departments and industrial organizations, its superiority has been established.

It is strong, simple and trouble-free, with no holes to clog or moving parts to get out of order. Finest materials are used throughout to insure long life and trouble-free operation.

Let us send you descriptive literature.

Manufacturers of Quality Fire Department Brass Goods Since 1902

ELKHART BRASS MFG. CO.
ELKHART INDIANA

Do the masks that you now have really protect a man against smoke suffocation and fumes poisoning? You can easily test them and be certain. Write on official stationery for the Acme Smoke Tester, which will be mailed FREE.

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PROTECTION EQUIPMENT
COMPANY
3604 Liberty Avenue
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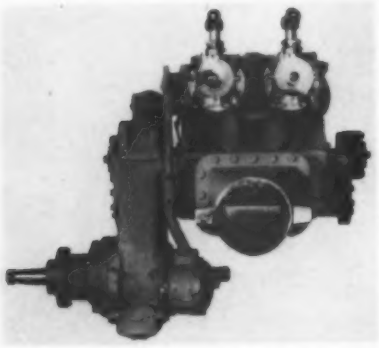
ACME
protects against
ALL
GASES and SMOKES

CARBON MONOXIDE and all other gases, *and also* smoke suffocation and fumes poisoning are effectively guarded against by use of the Acme All Purpose Gas Mask Type FD. Many gas masks in common use afford a minimum of 50% effectiveness in filtering out smoke, as the standard of the U. S. Bureau of Mines requires; but Acme recommends only complete protection. The Acme Type FD Mask filters out all smokes and fumes with such thoroughness that not a visible trace will pass through. Write for Folder 401.

New Improved ACME
full-vision
ALL PURPOSE GAS MASK

WATEROUS FIRE PUMPS



WATEROUS CENTRIFUGALS ARE BUILT TO HIGH QUALITY SPECIFICATIONS

For instance, in the two-stage centrifugal pump anti-friction bearings are used throughout the fire pump as well as in the priming pump. Ask for a detailed description before you buy a fire pump. SPECIFY WATEROUS.

Waterous Dependable

WATEROUS COMPANY
SAINT PAUL

"The Superior"
A MODERN and PROVEN
LIFE NET

The SUPERIOR LIFE SAVING NET is stronger than any other, because of the tested breaking strength of 1,800 lbs. of each individual rope.

The direct pull shock absorber system eliminates all friction and its greater resiliency provides for a safer, easier landing.

Made of Chrome Molybdenum steel, the frame may easily be folded for storage within a few seconds.

For the utmost in LIFE SAVING VALUE ..."SPECIFY SUPERIOR"

For ECONOMY, have your old net converted into a "SUPERIOR".

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Training Nets and Structures
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Life Size Training Dummies

William Moeller
Designer Consultant

SUPERIOR FIRE EQUIPMENT CO.
72-76 Park Pl New York, N.Y.

man who brings disgrace on the uniform, shall be returned to his own department for disciplinary action.

The unit will remain intact until appointed to various stations by the British authorities. Each unit by a majority of vote of its members, shall select one of its members who shall assume the Honorary rank of Captain. He is to be responsible for the discipline and welfare of the unit under his control, and to act as liaison officer between the central office of the unit and the local authorities under which the local unit is placed. Those authorities will assume the responsibility of housing and feeding the unit and supplying them with the necessary equipment.

It is suggested that a navy blue uniform be adopted and the honorary Captains be given small shields having O.V.F.F.B. engraved thereon with the national emblem under the word Captain.

I believe that the transportation of this trained force could be easily arranged with the British authorities, and that it should be arranged as expeditiously as possible after the formation of the unit so that the unit might be placed in service as soon as practical. This service, being non-combatant and on a parity with that which is being performed so excellently by the Red Cross, should not cause any International complications. However, it should be another link in the chain which binds the two great democracies together, these two being the last remaining bulwarks against the flood of barbarians who are making so desperate a bid for world control.

G. DRAPER,
408 Talbot Street,
St. Thomas, Ont., Canada.

Gloucester City Improvements

To the Editor:

In the way of recent improvements in our department, we have received a Seagrave sixty-five foot aerial ladder truck with a 100-gallon booster pump and tank, a ladder gun, life net and life belts. We obtained this truck and also new boots, new coats, new helmets, new hose, new inhalator, a large cylinder for recharging the inhalator, gas mask, spray nozzle, new air horns, and new fire boxes through my recommendations. The fire alarm system was repaired, new carbon dioxide extinguishers placed, new roll call system established, repairs to older trucks made—all done in accordance with recommendations of the schedule rating office.

The only method that I have that was not used before my time as Chief was a covering up system, in which each company knows what alarm they answer and what boxes they cover.

We have seven paid drivers, five officers, and fifty volunteers composing the department at the present time.

CHIEF LEWIS HAMMILL,
Gloucester City, N. J.

Trenton May Purchase Equipment

Provided the city's funds hold out, Trenton, N. J., may purchase a new 750-gallon pumper and three new automobiles. Well over a year ago, Chief Phelan requested a new pumper because the one used was practically worn out.

FOR FIRE DEPARTMENT SUPPLIES AND EQUIPMENT OF DISTINCTION

made by an organization which has for many years originated and made trustworthy products for the fire industry.

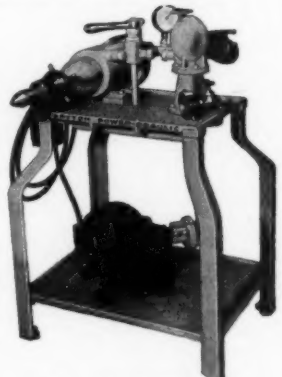
Write
THE WOOSTER BRASS CO.
WOOSTER OHIO

STREAMLINE
your hose expanding equipment with
DAYTON POWER-DRAULIC
EXPANDER HOSE TESTER
EXPANSION RING EXTRACTOR

Expands couplings from ¾" to 6" size

Tests hose up to 700 lbs.

Removes old expansion rings from old couplings. No manual effort needed.



Motor-driven with ¾ h.p. gear head motor

FOR THE PROPER CARE OF HOSE
MORE PRESSURE - LARGER MOTOR
ROOMIER WORK TABLE
REPLACEMENT SEGMENTS (ALL SIZES)
FOR ANY OLD HYDRAULIC EXPANDER

SEND FOR ILLUSTRATED BULLETIN
DAYTON FIRE EQUIPMENT CO.
1242-48 W. 2ND ST., DAYTON, OHIO

Convention Dates

Feb. 26—CENTRAL WESTERN OHIO FIREMEN'S ASSOCIATION. Bi-monthly meeting, Lewisburg, Ohio. Secretary, Roger C. O'Donnell, Covington, Ohio.

May, (tentative)—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual Meeting, Grand Island, Nebr. Secretary-Treasurer, Ray Tiller, Waterloo, Ia.

May, (tentative)—NORTHWEST FIRE SCHOOL. To be held at the University of Minnesota, Minneapolis, Minn. Committee Chairman, W. L. Bundy, Alexandria, Minn.

May 5-6—KANSAS STATE FIREMEN'S ASSOCIATION. Annual Meeting, McPherson, Kans. Secretary, K. D. Doyle, Waterloo, Kans.

May 14-16—NORTH CAROLINA FIRE COLLEGE AND DRILL SCHOOL. Annual Meeting, Charlotte, N. C. Secretary, J. C. Fitzgerald, Asheville, N. C.

May 19-21—NEW ORK STATE FIRE CHIEFS' ASSOCIATION. Annual Meeting, Utica, N. Y. Secretary-Treasurer, Chris W. Noll, Poughkeepsie, N. Y.

June—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual Meeting, Conway, S. C. Secretary-Treasurer, Paul E. Wilburn, Union, S. C.

June 2-6—SOUTH DAKOTA FIREMEN'S ASSOCIATION AND FIRE SCHOOL. Annual Meeting, Sioux Falls, S. D. Secretary, M. C. Sullivan, Parkston, S. D.

June 9-11—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. Annual Meeting, Alexandria, Minn. Secretary, Fred Pfaender, New Ulm, Minn.

June 12-14—EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Meeting, Lancaster, Pa. Secretary, Charles E. Clark, Box 217, Wayne, Pa.

June 19-21—HUSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. Annual Meeting, Poughkeepsie, N. Y. Secretary, Chris W. Noll, Poughkeepsie, N. Y.

June 25—CENTRAL WESTERN (OHIO) FIREMEN'S ASSOCIATION, 11th Annual Convention, Ft. Loramie, Ohio. Secretary, Roger C. O'Donnell, Covington, Ohio.

July—TEXAS FIREMEN'S TRAINING SCHOOL. Annual Meeting, A. and M. College of Texas, College Station, Tex. Director of Firemen's Training, H. R. Brayton, A. and M. College of Texas, College Station, Tex.

July 21-23—MARITIME FIRE CHIEFS ASSOCIATION. Annual Convention, Edmundston, N. B. Secretary-Treasurer, Charles A. Cunningham, St. John, N. B.

July 21 - 23 — WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. Annual Convention, Wausau, Wis. Secretary, A. V. Simon, Ladysmith, Wis.

Aug., (tentative)—DOMINION ASSOCIATION OF FIRE CHIEFS. Annual Convention, Peterborough, Ont. Secretary, Chief James Armstrong, Box 56, Kingston, Ont.

Aug. 4-5—NEW YORK STATE FIRE FIGHTERS' ASSOCIATION. Annual Convention, Syracuse, N. Y. Secretary, Frank A. Emden, 1403 Mather Ave., Utica, N. Y.

Aug. 12-15—VIRGINIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Staunton, Va. Secretary, R. B. Barker, Newport News, Va.

Aug. 16-17—VERMONT STATE FIREMEN'S ASSOCIATION. Annual Meeting, place not fixed. Secretary-Treasurer, W. H. Adams, Vergennes, Vt.

Aug. 19 - 22 — FIREMEN'S ASSOCIATION STATE OF NEW YORK. Annual Convention, Geneva, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

Sept.—NEW HAMPSHIRE STATE FIREMEN'S ASSOCIATION. Annual Meeting, place not fixed. Secretary, A. G. Robinson, Manchester, N. H.

Sept. 12-13—NEW JERSEY STATE FIREMEN'S ASSOCIATION, Annual Meeting, Atlantic City, N. J. Secretary, Evan F. Benners, R. 602, 24 Branford Place, Newark, N. J.

*May 7-9—GEORGIA STATE FIRE COLLEGE. Annual Meeting, Atlanta, Ga. Director of College, Harry Phillips, 166 Ala Street, S. W., Atlanta, Ga.

*The notices marked with an asterisk are either appearing for the first time or have been changed since the preceding issue.

40 BELOW or 400 ABOVE . . .

Aluminum Ladders ARE always EFFICIENT

Regardless of the weather, Aluminum Ladders are always strong and safe. Temperatures from 40 degrees below zero to 400 degrees above do not affect their strength, so that they are equally efficient in North and South, in summer and winter.

Only ALUMINUM LADDERS Offer ALL These Advantages

STRONGER—Aluminum Ladders are twice as strong as ordinary ladders. Furthermore, they bend, rather than break suddenly, when overloaded.

LIGHTER—Aluminum Ladders weigh only half as much as the usual type of ladder. They can be handled and raised faster, with fewer men.

MORE DURABLE—Aluminum Ladders will not rust, rot, splinter nor burn; they remain safe over years of service with practically no upkeep cost.

Take advantage of these Aluminum Ladder extras. When ordering new trucks or replacement ladders, be sure to specify Aluminum Ladders . . . "The FIRST Cost is the LAST Cost".

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200 ADAMS STREET, TARENTUM, PA.

For Any

BOOKS

on any phase of

FIRE FIGHTING OR FIRE PREVENTION

Send your order to

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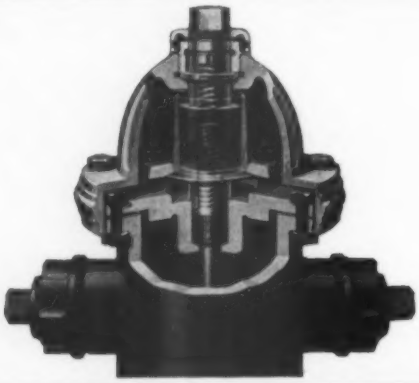

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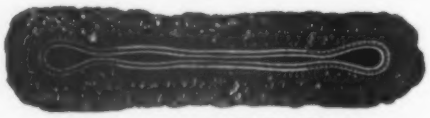
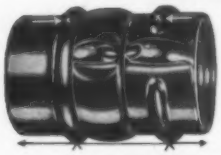
The SELF OILING feature of these hydrants is a favorite with Fire Chiefs. They like it because they know the threads cannot rust, it cannot freeze, and the operating nut will always turn easily. There's no time lost hooking up to a Mueller-Columbian.

WRITE FOR FULL INFORMATION

Mueller Co. Chattanooga, Tenn.



This is the new LIGHT WEIGHT BI-LATERAL FIRE HOSE



This hose will stand 900 pounds pressure and weighs but 45 pounds to the section uncoupled.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze), with the swivel-protecting feature.

This coupling will stand several expansions and can be used over and over again, saving your city at least 20c to 30c per foot on future hose purchases.

When in the market, let us show you that we can give you the best service obtainable for the least money.

BI-LATERAL FIRE HOSE COMPANY
20 N. Wacker Drive Chicago, Illinois

HARRINGTON

FA-20

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A high quality box in every detail. Inner and outer shells and the movement case are of cast aluminum. This makes for lighter weight, long service and freedom from corrosion. Positive in action, non-interfering of the shunt and successive type. Doors are quick acting. We will furnish any type door to meet specific requirements.

Send today for Bulletin 20 and prices.

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Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

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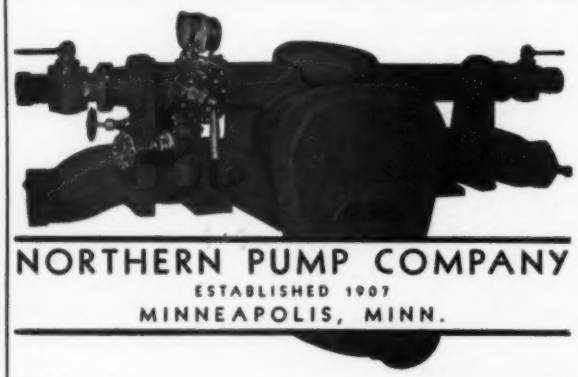
Waterford, N. Y.



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ESTABLISHED 1907
MINNEAPOLIS, MINN.

Comfortable Living On Pension Incomes.

Marvelous Climate, Comfortable Homes, Entertainments, Sports.

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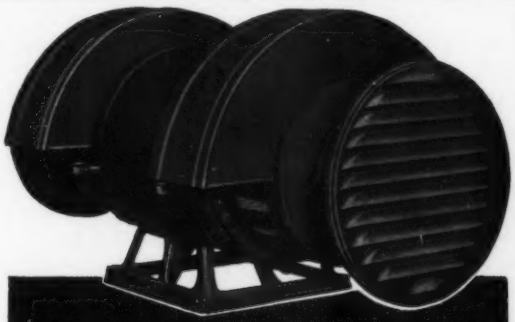
Our Advertisers

have data and information which can help you greatly. Get in touch with them.



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GENERAL ALARM SIREN

You Can Depend On It *ALWAYS*

Every community has need for a general alarm that will give unfailing service. Can you afford to depend on inadequate equipment, something new or of cheap quality?

Sterling's reputation for making quality sirens is world wide and dates back more than 36 years. Why experiment?

Send for Bulletin 631 which illustrates and describes the complete "Model M" system.

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A complete line, including
Wax Treated - Solid Multiple Woven
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Manufactured by
HEWITT RUBBER CORPORATION
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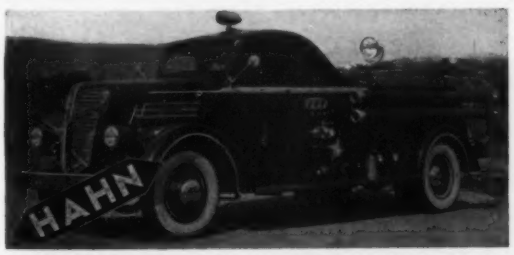
"Territories Available"



HAHN FIRE APPARATUS
Air-Cooled or Water-Cooled
Powered Apparatus
HAHN MOTORS, INC. **HAMBURG, PA.**

Ask for it...
It's FREE

As a reader of *Fire Engineering* you are entitled to our buyers' information service free of cost. Here is how it works.

Whenever you are seeking information about any piece of equipment or material that you are planning to buy, first look through the advertisements in this issue. They are your best guide.

Then, if you do not find what you want, just use the blank below to tell us what you need and we will see that you get the information you want.

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NOTE: The more specific you can be in detailing the items you are interested in, the more specific we can be in having the correct information sent you.

1-41

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—ROTARY PUMPS
TO 1,200 GALLONS PER MINUTE

—CENTRIFUGALS
TO 1,500 GALLONS PER MINUTE

—SECURE LASTING PROTECTION IN ANY STANDARD CAPACITY

Write today for the Catalog and Folders on the complete line of Hale Pumps.

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YOUR BADGE OF HONOR

Something more than a decoration . . . an insignia of courage and unselfish devotion to duty. That badge should be worthy of its place on your uniform . . . let it radiate quality and your pride in wearing it. BRAXMAR has been making badges for more than 60 years.

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BRAXMAR BADGES

Standard for Over Sixty Years

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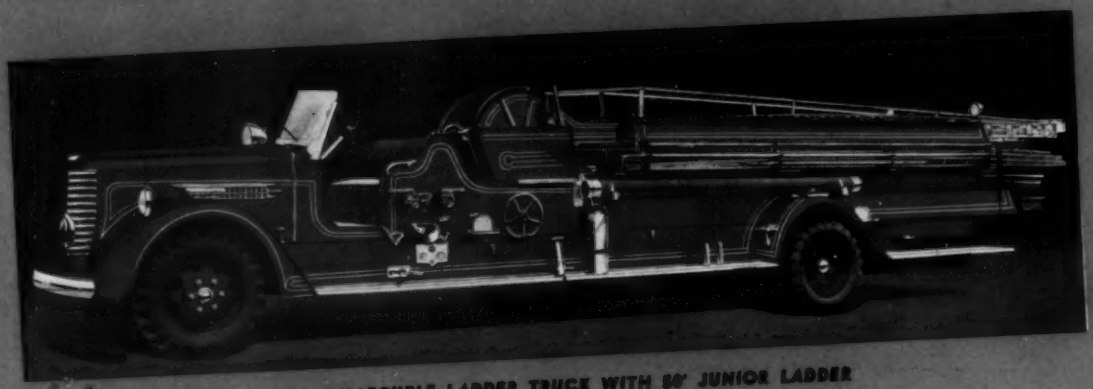
THE PIRSCH JUNIOR AERIAL LADDER TRUCK

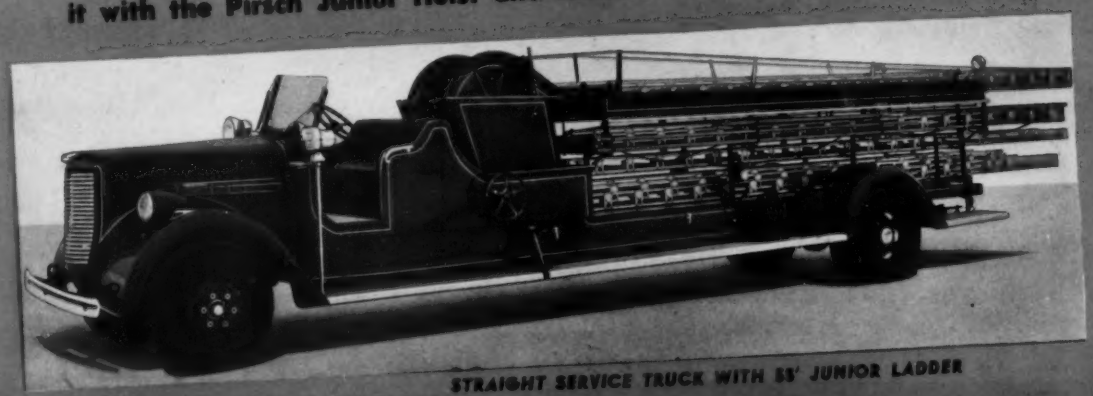


750 GAL. QUADRUPLE-LADDER TRUCK WITH 50' JUNIOR LADDER

The Pirsch Junior Aerial Hoist provides a mechanism whereby one man can raise, place and lower a 50' or 55' extension ladder.

Slippery or icy pavements cannot interfere with raising or placing this ladder—if the apparatus can get there the ladder can be raised.

If you are considering a new service or quadruple ladder truck equip it with the Pirsch Junior Hoist and ladder.



STRAIGHT SERVICE TRUCK WITH 55' JUNIOR LADDER

PETER PIRSCH & SONS CO., KENOSHA, WIS.

A COMPLETE LINE

OF EUREKA *Streamlined* FIRE HOSE

The only complete line offering you Multiple-Woven, Double-Jacket, and Single-Jacket types of construction in various grades and prices. Each construction is available with such exclusive EUREKA developments as:

STREAMLINED—accomplished by the Smooth-Interior Filler-Ply . . . making the inner surface smooth and level . . . eliminating "washboarding" . . . assuring maximum pressure at the nozzle.

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